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LEATHERWORK MANUAL

BY

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LEATHERWORK

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INTRODUCTION TO LEATHERWORK

Leather work offers almost limitless horizons. . .an enjoyable lifetime hobby. . .a rewarding, satisfying career. As an aid to providing an outlet for creative energy and drive, this book is dedicated. Within its pages, you will find illustrated step-by-step instructions for carving and decorating leather, helpful directions on how to hold and use the various tools needed plus detailed requirements for a well-planned leather work program.

Decorating leather is a fascinating art that dates back to prehistoric days. Archaeologists have found leather pieces. . .partially preserved leather cloaks and flagons scattered wherever ancient man roamed.

Beautifully decorated leather thongs have been unearthed from the tombs of Egypt. And the prized shields worn by Roman centurions were of decorated leather.

Indeed, if you were to open the Bible to the Book of Genesis, Chapter III, Verse 21, you would find the first literary reference to leather: "Unto Adam also and to his wife did the Lord God make coats of skin and clothed them."

Eons ago, man the hunter, found the animals he killed for food could provide him and his family with sandals and garments by simply curing and fashioning the skins.

From the hides the cavemen used for clothing to the pressurized leather suits worn by today's spacemen, and the gauntlets worn by nuclear scientists to protect their hands from burns, leather has fulfilled the need.

For centuries, leather has continued to serve mankind. During the Middle Ages, however, only the wealthy could afford boots, capes, saddles, decorated chairs, etc. made of leather. Leather workmanship was limited to a very narrow section of society. A secretive lot, Leather Guildsmen closely guarded knowledge of their art which they handed down from father to son.

When Cortez conquered Mexico in the early 16th Century, leather artistry came boldly into the New World.

The Conquistadores brought horses and with them came the need for saddles and other horse gear. Spain had long been a leader in leather artistry and the skilled craftsmen who came over to the New Land coupled their vast knowledge with the inspiration they gleaned from the beautiful floral patterns to be found all about them. Thus came the transition from basic geometric designs dating back to medieval times to the floral patterns of modern artistry.

Today, anyone can enjoy leatherwork, the art of creating beautiful and useful articles of leather. Materials presented in this book are offered as an aid to you, the instructor of manual arts students.

Increasingly frustrated by day to day automation of his life, modern man's appetite for individual recognition grows as the tempo of mechanization quickens.

To prepare the student for enriching creative experiences, especially as offered through the medium of leather, we have prepared this in-depth presentation of the fundamentals of leather work. It is our hope that with the strong emphasis on academic subjects, this presentation will help balance the scales of knowledge toward proficiency in manual dexterity. . .so vital to individual confidence and emotional ability.

THE STORY OF LEATHER

Leather, one of mankind's oldest natural resources, is a foremost gift to man from Mother Nature. Without it man might not have survived. Vivid evidence of its outstanding importance dates back across the centuries of civilization; back beyond the birth of our nation to the cultures of 18th Century Europe and on back beyond the era of the domination of the Romans.

Modern Archaeology has uncovered leather articles and artifacts from cultures dating back over 33 centuries and found them to be in an excellent state of preservation. These articles were produced in the 1300 to 1400 B.C. period.

Man's dependency and appreciation of leather, coupled with his instinctive drive to improve upon the beauty of Nature, led him to practice creative artistry using leather as a media or raw material. From fashioning crude protective footwear to the creation of unbelievably beautiful articles of great utility, human beings have reaped a great harvest of benefit and pleasure from leather.

The history of leather is closely merged with the progress of mankind. The ancient cavemen counted leather as one of his most valuable assets. With the skins of animals he was able to fashion crude footwear which permitted him to range far and wide in search of food. With leather vessels in which to carry water, he was no longer isolated, no longer limited to living near a lake or stream.

Leather provided clothing, armorment and even shelter for early civilizations. Archaeologists have found remnants of leather clothing scattered as far and wide as ancient man wandered.

Leather was so respected as to become the basis of an ancient story about a powerful eastern potentate. It was his custom to walk extensively about his kingdom but because of the rugged terrain he demanded that his servants place animal skins a step apart in order to protect his royal feet from the cruel stones as he strolled along. This was slow and tiring and as he grew weary one day, he flew into a rage and commanded his Prime Minister to immediately cover the earth in his kingdom with animal skins.

Convinced that his king had demanded the impossible and knowing that the price of failure was certain death, the prime minister tore his garments and put ashes on his head preparing to die.

An imaginative young man heard of his predicament and tried to see the prime minister, claiming he had a solution. But the prime minister, resigned to failure and death, refused to give audience to anyone.

With great ingenuity the young lad contrived to steal into the king's palace. Slipping silently into the king's private chamber, he bowed low and, with fear and trembling said "My Lord, I have found a way to cover the earth with leather." The king, taken back by the audacity of this young chap, agreed to hear him out.

Removing a package from under his arm, the lad opened it and displayed what we today call a pair of sandals. Placing them on the king's feet, he said, "and now my Lord, as far as you, the King, are concerned, the world is covered with leather."

Delighted, the king made the young man his new Prime Minister. . .and the world discovered another valuable use for leather.

HISTORY OF LEATHER TANNING

Animal skins used by prehistoric man deteriorated rapidly, drying out, becoming stiff and unmanageable.

Gradually, they learned to scrape off the flesh residue from the underside of the skins and stretch the skins in the sun to dry. To soften the dried skins, they pounded them with stones and made them still softer yet by chewing the skins.

Archaeologists believe that the ancient Hebrew tribesmen were the first to use an actual tanning process. The latter discovered that the juices from crushed tree bark had a very preservative effect upon dried animal skins.

After burying animal skins in a deep earthen vat with layers of finely crushed bark between them, the tribesmen saturated them with water and closed off the vat for a period of six months. They found that leather thus crudely tanned would last almost indefinitely.

Early Egyptian civilization prized leather like gold.

To the ancient Romans, leather was so important, they used it as currency. Status and rank of a Roman was judged by the quality and style of his sandals.

When man realized the importance of recording his thoughts and knowledge in books which he could carry and store more conveniently than stone tablets, he began to express himself on parchment leather pages.

As man found new and different uses for leather, new and more sophisticated methods of tanning were developed.

MODERN TANNING

From the crude and simple processes of the early leather tanner, emerged the foundation and basic principles employed by our modern tanneries.

Much of today's tanning technology was developed in Europe and England. With new advantages provided by modern chemistry, man has now developed processes whereby he can produce a beautiful and longlasting leather to satisfy any need, no matter how exacting.

The modern leather tannery is made up of three major sections. The first section stores, cleans, and removes hair from the animal skins. Next, natural oils are removed and preservative chemicals introduced into the very heart of the skin structure. During the final stages of production, the leather is stretched and dried. It is trimmed and shaved to meet exacting specifications as to thickness and texture. Additional oil and fat liquors are used to give leather the desired "feel" and character.

Finally, leather is measured and sorted before shipment to one of the thousands of leather fabricators who will manufacture products of beauty and durability in answer to man's evergrowing demand for fine leather products.

TANNAGE TYPES

Advanced technology has developed a variety of tannages to accommodate various end product needs. It would take volumes to cover this wide range of tanning methods. We, however, will concentrate on the two types of tannage which dominate the American leather industry: chrome and vegetable tanning.

Chrome tanning is the fastest, requiring only about one-fourth the time needed by other processes. Skins are agitated in a strong solution of chromic salt in large drum-like containers. This tightens the fibers of the skin, adds tensile strength and makes finished leather water resistant. You can determine if leather is chrome tanned by cutting through the body of the leather. Internal fibers will appear bluish white. Chrome tanned leather is used primarily for footwear.

Our family of tooling leathers are vegetable tanned because this method creates the exact grain surface conditions needed to receive our carving and stamping tool impressions. Vegetable tanned leather absorbs water readily and dries out quickly because the fiber structure is less compact than that of chrome tanned leather.

Hides are placed in deep vats containing a formulation of extracts from several types of tree bark, water and preservative chemicals. During the approximate one-hundred day tanning period required, hides are subjected to stronger and stronger solutions of the tanning formulation.

Because vegetable tanned leather is pliable, it is much easier to work with than chrome tanned leather. The latter is much more difficult to alter and decorate as desired.

TYPES OF LEATHER

By-products of the meat packing industry...hides and skins of cattle, sheep and goats provide the main source of raw materials for American tanners. In terms of volume and value, cattle hides and calf skins predominate. These furnish most of the footwear and leather goods produced in America.

Other animal skins adapted to man's use include: Horsehide, for orthopedic braces, gloves and other special uses, and Pigskin, for wallets, cases and numerous small leather accessories; Alligator, Sharkskin, Ostrich and Turtle skins are used primarily for exotic luxury items.

THE UNITED STATES LEATHER INDUSTRY

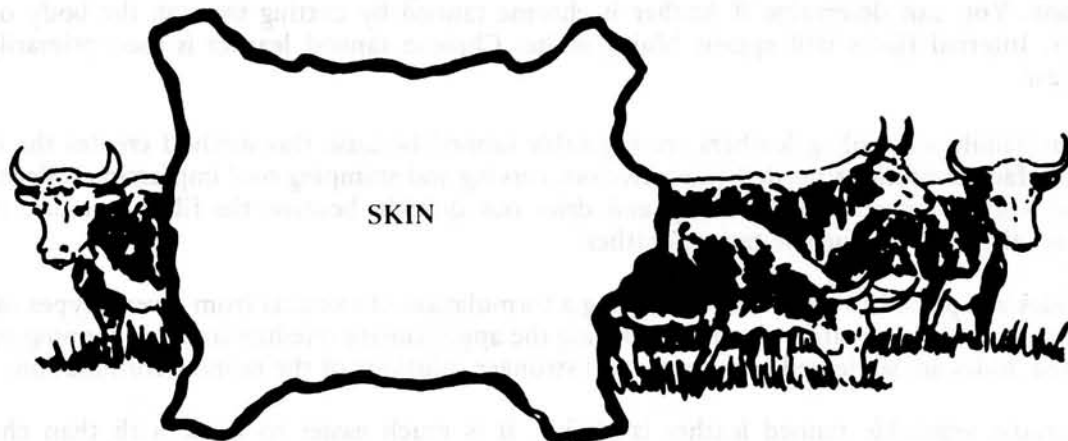
From its humble beginning in the small settlements of the thirteen colonies, the American Leather Industry has grown into a sprawling enterprise. It supplies the ultimate in beauty and quality in both leather and leather goods in this country and throughout the world. At present, the American tanning industry produces annually over 20 million cattle hides alone.

From the beginning of man's history to the present, leather continues to be man's constant companion and friend.

INTRODUCTION TO LEATHER CARVING

Leather is unique. . .different than any cloth put together by man. . .for it is the actual skin of an animal that grew as the animal grew. To change this skin into leather, the skin must be tanned. Various methods of tanning produce leather for different purposes.

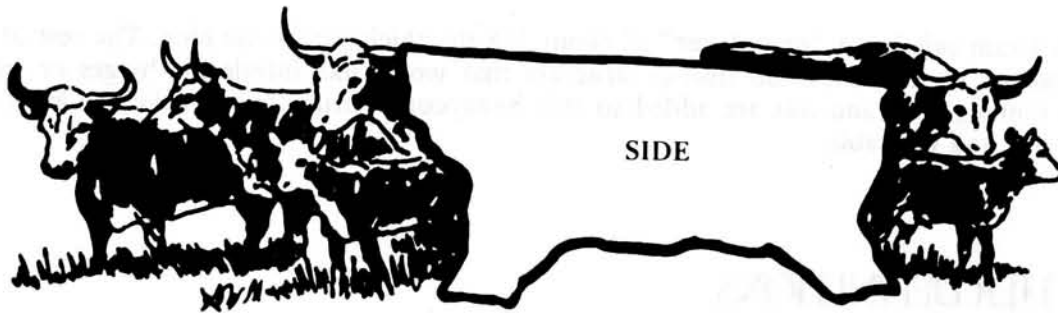
Leather for CARVING must be of "vegetable" tannage. This tannage absorbs moisture readily. . .allowing you to mold and form the leather easily. . .and carve, stamp and dye or add high gloss to your leather projects. The skins of bovine animals (cows, oxen, etc.) provide most of the leather for Carving. This leather is commonly called "STRAP" leather.



A skin is a full hide as it comes from the animal. Smaller animals (calf, goat, sheep, pig) are usually tanned as a skin or full hide.

The complete hide of the animal is known as a skin. It may be left whole or cut into sections: sides, bellies and backs.

SIDES and SKINS, usually sold by the square foot, are measured by special machines at the tanneries. The number of square feet is usually marked on the underside of the hide with a crayon or chalk. Fractions of a foot are always in FOURTHS (For example: $12^1 = 12\frac{1}{4}$ sq. ft.; $12^2 = 12\frac{1}{2}$ sq. ft.; $12^3 = 12\frac{3}{4}$ sq. ft.).

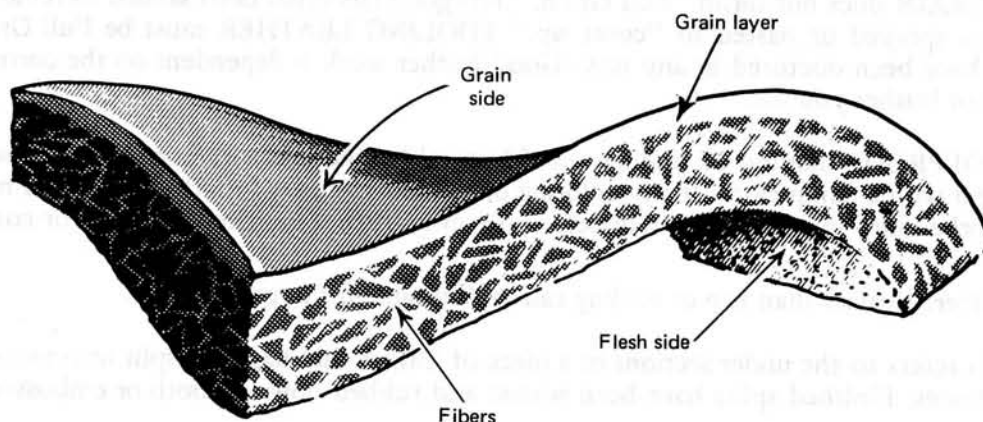


For easier handling during tanning, large animal hides are usually cut in half at backbone. Thus, a side of leather is just that! It is one side or one half of a hide.

Unlike cloth which is manufactured, leather, grown by nature, is less uniform in grade and thickness. Therefore, it is not unusual for a given leather in a given grade to vary slightly from time to time.

The THICKNESS (or weight) of leather is usually measured in terms of ounces. One ounce equals approximately $\frac{1}{64}$ " in thickness. Thus, 7-8 oz. means the leather is 7 to 8 oz. in weight or $\frac{7}{64}$ " to $\frac{8}{64}$ "... meaning approximately $\frac{1}{8}$ " thick. Lighter weight leathers such as calf or kip (large calf) range from $1\frac{1}{2}$ oz. to 3-4 oz. Heavier leathers, 4-5 oz. to 10-11 oz. and more come from the hides of mature cattle.

To make leather a uniform thickness, the hides are run through a splitting machine. Since animal hides are not of uniform thickness and since they are wet when put through the splitting machine, the thickness of the leather will not remain the same throughout the hide. There will always be slight variations and that's why leather weights seldom measure out in exact 64th's of an inch. This is why leathers are usually shown as 4-5 oz. 6-7 oz., etc.



The "flesh" side of leather is the underpart that was next to the meat and flesh of the animal. The hair side, called "Grain" side, is most commonly used for carving and stamping. Its fiber structure is more closely knit and easier to cut with the swivel knife. When carving and stamping tools are properly used, the Grain side will retain even the tiniest details.

The Grain side has a "grain layer" of about 1/5 the thickness of the hide. The rest of the hide consists of a honeycomb fibrous structure that works like interlacing hinges or scales. During tanning, fats and oils are added to this honeycomb structure to make the grain side leather soft and workable.

LEATHER DEFINITIONS

Skin: Leather tanned in the whole pelt, same size and shape as it came from the animal. Calf, goat, sheep, pig, are usually tanned in this form.

Kip: One half of a large calf, usually 9 to 17 square feet in size.

Extreme: A side just larger than Kip, but smaller than cow or steer side, usually 17 to 20 square feet.

Side: One half skin or hide usually 22 to 26 square feet.

Back: A side with the belly cut off, usually 15 to 18 square feet.

Belly: The lower part of a side, usually 6 to 10 square feet.

Grain: Epidermis or outer layer of animal skins.

Full Grain: Leather just as it is when taken off the animal. Only the hair has been removed and the grain or epidermis left on.

ONLY FULL GRAIN LEATHER WILL ABSORB WATER AND TOOL CORRECTLY. All leather for carving and tooling must be FULL GRAIN.

TOP GRAIN does not mean "Full Grain." Top grain has often been sanded to remove scars and is then sprayed or pasted to "cover up." TOOLING LEATHER must be Full Grain and must not have been doctored in any way. Good leather work is dependent on the correct type and finish of leather you use.

A FOOLPROOF method of finding out if Natural Leather has a doctored grain or is coated is rubbing it with a damp cloth. If any coloring or "dope" comes off on the cloth, or if moisture is not absorbed into the leather immediately and evenly, then it has been doctored or coated.

Tooling Steer: Heavier than Kip or tooling calf and suitable for larger patterns.

Split: This refers to the under sections of a piece of leather that has been split into two or more thicknesses. Finished splits have been waxed and rubbed down smooth or embossed with a design.

Slunk: Skin of an unborn or prematurely born calf. The skin is sold with the hair still on it.

Short Hair Calf: The hair is still the same length as when the animal was slaughtered. The hair is slightly longer and not so soft and slick as that of a Slunk.

Clipped Hair Calf: The hair has actually been clipped. Since these hides are from older animals than the slunk or short hair, the hides will be larger in size.

Cape: A soft, smooth lamb or sheep tanned especially for linings. It has a beautiful leathery feel.

Shelter Cape: Soft lamb skin in a weight suitable for garments of many kinds.

Gold and Silver Kid: Small Kidskins with a lamination of gold or silver.

Shearlings: A sheepskin washed and tanned with the wool left on, then clipped to the desired length, usually one fourth to one inch.

Morocco Goat: A goat originally from Morocco, now from India. Has a crinkled effect and is very durable. Used for billfolds, Bible covers, etc.

Coronado Goat: A smooth India goat, very tough and used for lacing and billfold liners.

Chrome Calf: This is a smooth finished calf used for many purposes. It is not suitable for tooling. Comes in many colors. A shoe leather.

Suede: A finish produced by running the surface of leather on a carborundum or emery wheel to separate the fibres in order to give the leather a nap. Available in many colors, 6 to 7 square ft. skins. Used for bags, bag linings, pillows, jackets, skirts and garments of all types. Most suede skin comes from lambskin.

Sheer Suede: A very light, fine and soft suede as the name indicates.

Chrome Suede: Taken from the flesh side split off a cowhide.

Glove Horse: A genuine horsehide tanned soft as a glove.

Pecca Pig: Pig design on lambskin.

Skivers: The top grain split off a sheepskin. Very light and used for pasted or glued linings. The flesh side of this leather is often used for making CHAMOIS.

Chamois: The flesh side of a heavy sheep, specially treated.

Plivers: The grain side of a small sueded sheep. The leather has been split, the grain side called Plivers, the flesh side termed Sheer Suede.

Natural Lamb: Used for linings. Suitable for tooling in the heavier weight. Color "natural" as name indicates.

Genuine Sharkskin: Breathing, yet water-repellent. From the depth of the sea, this leather has an unusual grain surface. Used principally for men's shoes, tips on children's shoes, belts and wherever leather is used. Virtually skuff-proof.

Alligator: Genuine Alligator is sold by the inch measurements across the widest point. They run 9 to 16 inches and are used mostly for billfolds and small handbags. Alligator skins are taken from the underside of the animal since the top is knobby and gnarled.

ODDITIES

Football: Usually referred to as "The Pigskin" is not made of pigskin but generally of cowhide.

NOTE: No animal or reptile produces both "fur" and "leather". It's one or the other, but never both. The "fur bearing seal" and the seal from which leather is tanned are two entirely different species.

THE STORY OF LEATHER: REVIEW TOPICS

1. When were the oldest existing leather articles produced?
2. Name three needs of man which were met with the use of leather.
3. Who developed the first actual tanning process for leather?
4. Describe the three major sections of a tannery.
5. What are the two main tanning processes used by the American Tanning Industry?
6. Name five different animals from which skins are taken in the production of leather in the United States.
7. What is meant by full grain?
8. Why is full grain leather necessary for carving and tooling?
9. What type of leather is used in covering most Bibles?

THE THEORY OF PLANTS

BY THE LATE

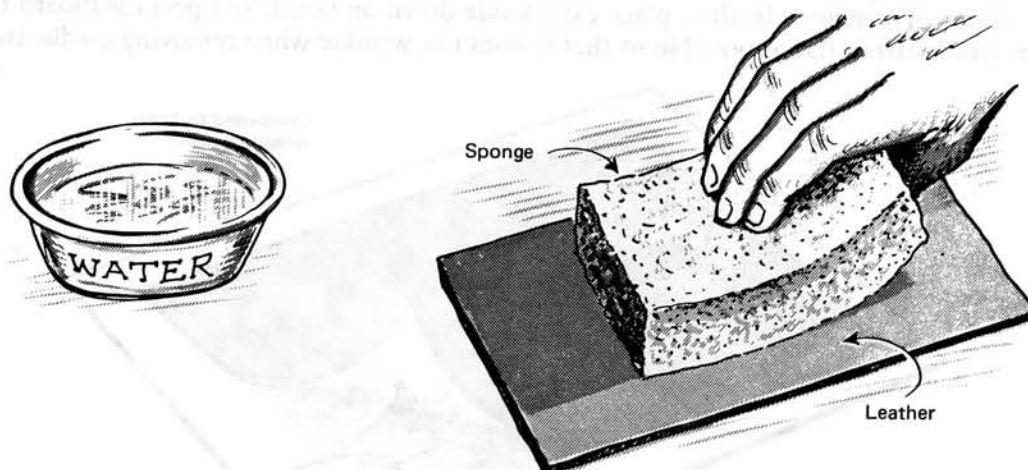
1. The first part of the book is devoted to a general introduction to the study of plants, and to a description of the various classes of plants which are found in the world.
2. The second part of the book is devoted to a description of the various classes of plants which are found in the world.
3. The third part of the book is devoted to a description of the various classes of plants which are found in the world.
4. The fourth part of the book is devoted to a description of the various classes of plants which are found in the world.
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8. The eighth part of the book is devoted to a description of the various classes of plants which are found in the world.
9. The ninth part of the book is devoted to a description of the various classes of plants which are found in the world.
10. The tenth part of the book is devoted to a description of the various classes of plants which are found in the world.

PREPARATION OF LEATHER

Before you can work leather, you must moisten it. As you wet the leather, the fibers swell and soften. Vegetable tanned leather, properly moistened, is like modeling clay. You can mold it. . . model and shape it.

Your best guide to moistening leather is through practice. Your sharp swivel knife blade will cut easily and smoothly and your stamping tools will imprint clearly and firmly into the leather **ONLY** when you have moistened the leather to the proper degree.

When the dampened Grain side of the leather has almost returned to its original color, it is ready to carve. You can also try testing the leather by holding it against your cheek. If it's dry, it will feel warm. . . if it's damp, it will feel cool and that's when you can begin carving the leather. With practice you will soon know instinctively when to begin carving.



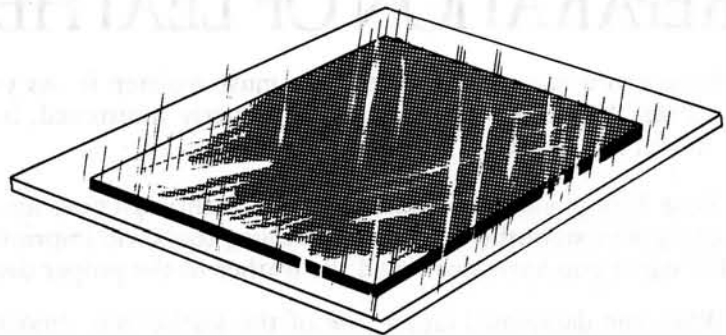
How do you wet the leather? By **CASING** it. . . which means simply rubbing a **DAMP** (not wet) sponge to the flesh side as evenly as possible. Then, turn the leather over and dampen the Grain side (carving surface). When it begins to return to its natural color, begin carving.

If some areas begin to dry, wipe your sponge over these areas to keep them damp enough to carve. If your leather is too dry, it will be too hard for you to cut with the swivel knife. If your leather is too wet, your cuts will not remain open. If leather is properly cased, your carving cuts will remain open.

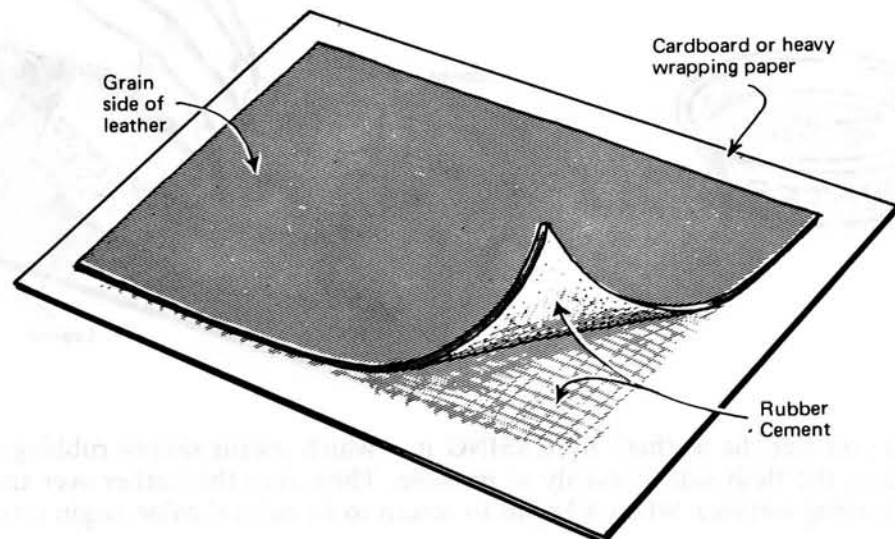
CAUTION: Always use glass, porcelain or enameled containers for water. . NEVER use metal containers. The slightest contact with these will produce dark stains on your dampened leather. . stains that are almost impossible to remove. Be careful to keep all filings or steel dust from grinding wheels, etc., completely away from your leather. Unnoticed by you until you have dampened your leather, such particles will mar or stain your leather.

If you must leave your leather work for an hour or so, hold and preserve the moisture content by covering it with a piece of plate glass or plastic food bag. If any drying spots have appeared, apply moisture lightly with a sponge and cover with the glass or plastic bag. This will retain the moisture for several hours and the leather will be in perfect condition to continue carving upon your return.

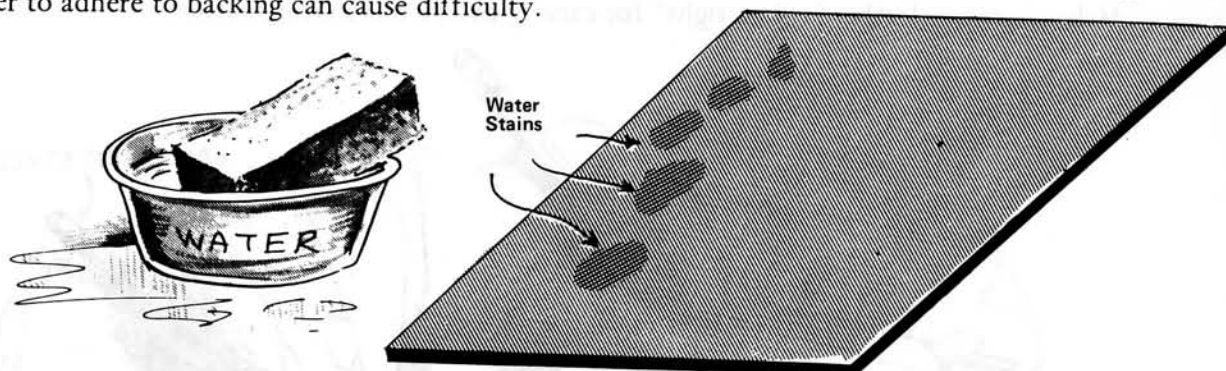
CAUTION: Storage of damp leather for a prolonged time can cause mildew.



To prevent leather from stretching while stamping the design, apply light coat of rubber cement to flesh side of leather and to cardboard (use hard finish cardboard for easy removal of leather after stamping). Allow cement to dry then adhere in place. Case leather and carve and stamp design. To remove leather, place carved side down on bench and peel cardboard from the leather. Hold leather flat as possible so that it does not wrinkle when removing cardboard.



CAUTION: For project which will not be lined, the use of cement on flesh side of tooling leather to adhere to backing can cause difficulty.

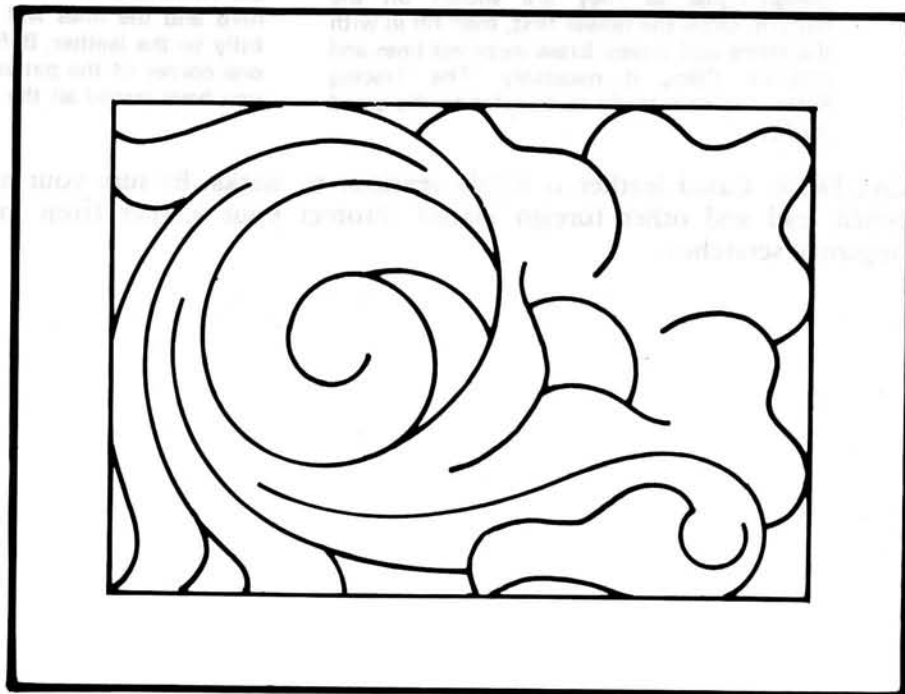


Water can also stain leather. It is possible a few drops of water will accidentally spill on a piece of leather. . .and going unnoticed. . .will be allowed to dry. This will cause a definite stain and darkened area that cannot be removed. . .unless treated at once! If water has been dropped onto dry leather. . .moisten the entire piece of leather at once. Apply more moisture to the spotted area with a sponge, fading out the surrounding areas. Enough moisture has to be applied to the spotted area to render it invisible, or the spot will always remain. In other words, the surrounding area to the spot must have an equal amount of moisture added so that when the entire piece dries, the spotted area will dry unnoticed.

TRANSFERRING YOUR DESIGN

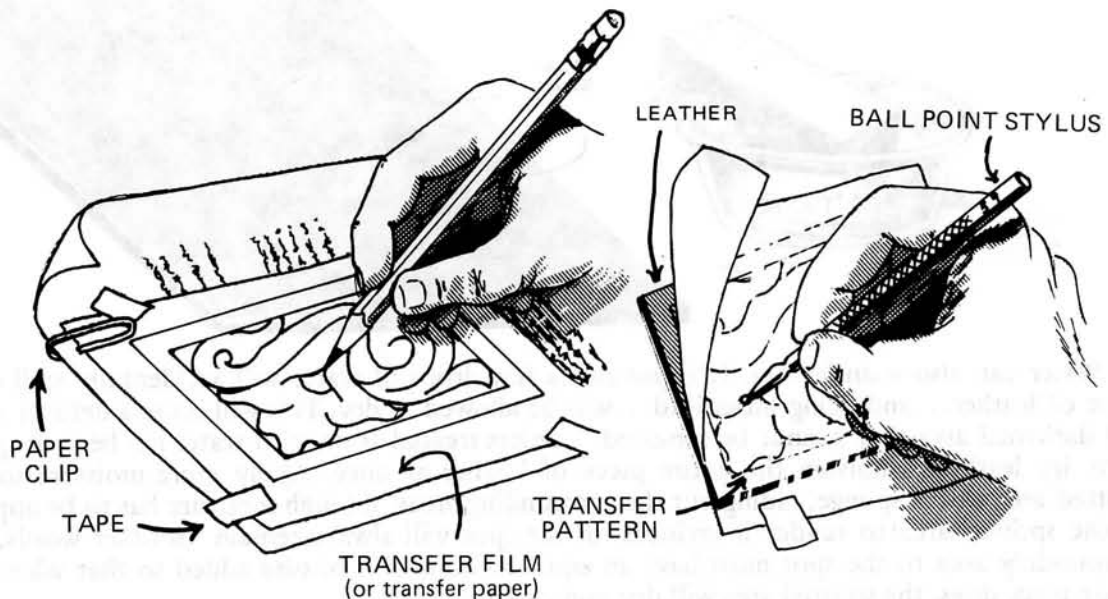
A Transfer Pattern is a drawing of the outlines of a design. . .indicating the lines to be cut with the swivel knife. Even when the design is an original creation, a Transfer Pattern is necessary. Decorative details or uses of the stamping tools are usually not shown on the Transfer Pattern.

Transfer
Pattern



Transfer Film is recommended for making Transfer Patterns. Use the side with a glossy waterproof surface next to the damp leather when transferring your design. Transfer Film will outlast Transfer Paper, but either is satisfactory. Never use carbon paper on leather.

Review the instructions for casing leather on page 17. Test your leather. Is it damp enough? Make sure your leather is "just right" for carving before transferring pattern.



HOW TO MAKE A TRANSFER PATTERN

Place a piece of Transfer Film (glossy side down) or Transfer Paper over the Transfer Pattern (shown above), and tape or clip it in position. With pencil, carefully trace over all of the lines of the Transfer Pattern Design...just as they are shown on the pattern. Draw the flower first, then fill in with the stems and leaves. Erase incorrect lines and redraw them, if necessary. The Tracing Pattern is now ready to transfer to the cased leather.

HOW TO TRANSFER THE PATTERN

Carefully place Transfer Pattern (pencil marks up) over the leather and tape in position. With a Ball-Point Stylus (or any dull pointed instrument) re-trace all the lines of the design...beginning again with the flower, then with the stems and leaves. Press firmly, but not too hard and the lines will be transferred beautifully to the leather. Before removing tape, lift one corner of the pattern and check to see if you have traced all the lines.

CAUTION: Cased leather is highly sensitive to marks. Be sure your hands are clean...free of pencil lead and other foreign matter. Protect your leather from improper tool marks and fingernail scratches.



PREPARING THE LEATHER FOR CARVING : REVIEW TOPICS

1. What is Casing leather?
2. What is purpose of Casing leather?
3. What is the result of working leather too wet? Too dry?
4. How do you determine when the leather is ready to carve?
5. When is it necessary to add water to the grain surface of the leather while carving?
6. Why should metal water containers be avoided when working with leather?
7. How are water stains removed?
8. What process is used to transfer the carving design on Cased leather?

THEORY OF THE EARTH

CHAPTER I

1. THE EARTH

2. THE EARTH'S SURFACE

3. THE EARTH'S INTERIOR

4. THE EARTH'S ATMOSPHERE

5. THE EARTH'S HYDROSPHERE

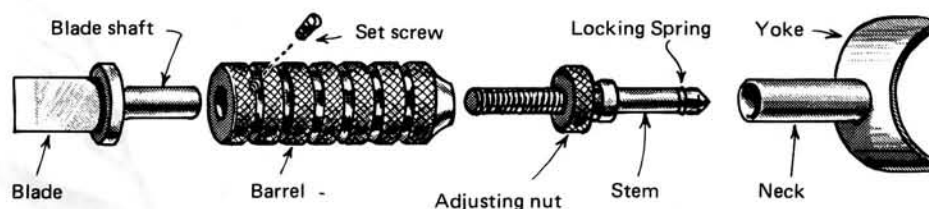
6. THE EARTH'S BIOSPHERE

7. THE EARTH'S GEOSPHERE

8. THE EARTH'S COSMOSPHERE

THE SWIVEL KNIFE

The SWIVEL KNIFE is the most important of all the leather carving tools. It has been designed to enable the leather worker to attain the maximum degree of efficiency and skill in cutting the most intricate designs.



The exploded view above shows all of its working parts. When assembled, the yoke provides a rest and pressure point for the index finger to control the depth of the cuts. The adjusting nut varies the length of the knife to fit different hands. The blade shaft inserts into the barrel and is secured by the set screw. The blade, barrel and stem unit turns independently of the neck and yoke. The locking spring supplies tension on the neck, holding it in place when pushed into position on the stem.

Study the following pages carefully. . . learn to use this tool! It is the most important leather working tool that you will ever hold in your hand.

The Swivel Knife BLADE is the "key" to all successful leather carving. The primary purpose of the blade is to cut the outlines of a design or pattern into the leather. The reason for cutting the lines is to give depth to the design. With properly cased leather, the cuts should prominently stand open. . . facilitating the use of the stamping tool operations that follow. It is of paramount importance that the blade be correctly sharpened. The sharpened angle must be correct so that the cut in the leather will not be too wide nor too narrow. The blade must be smoothly stropped so that it glides easily through the leather to perform its function to the greatest degree of efficiency.

HOW TO SHARPEN THE SWIVEL KNIFE



Straight



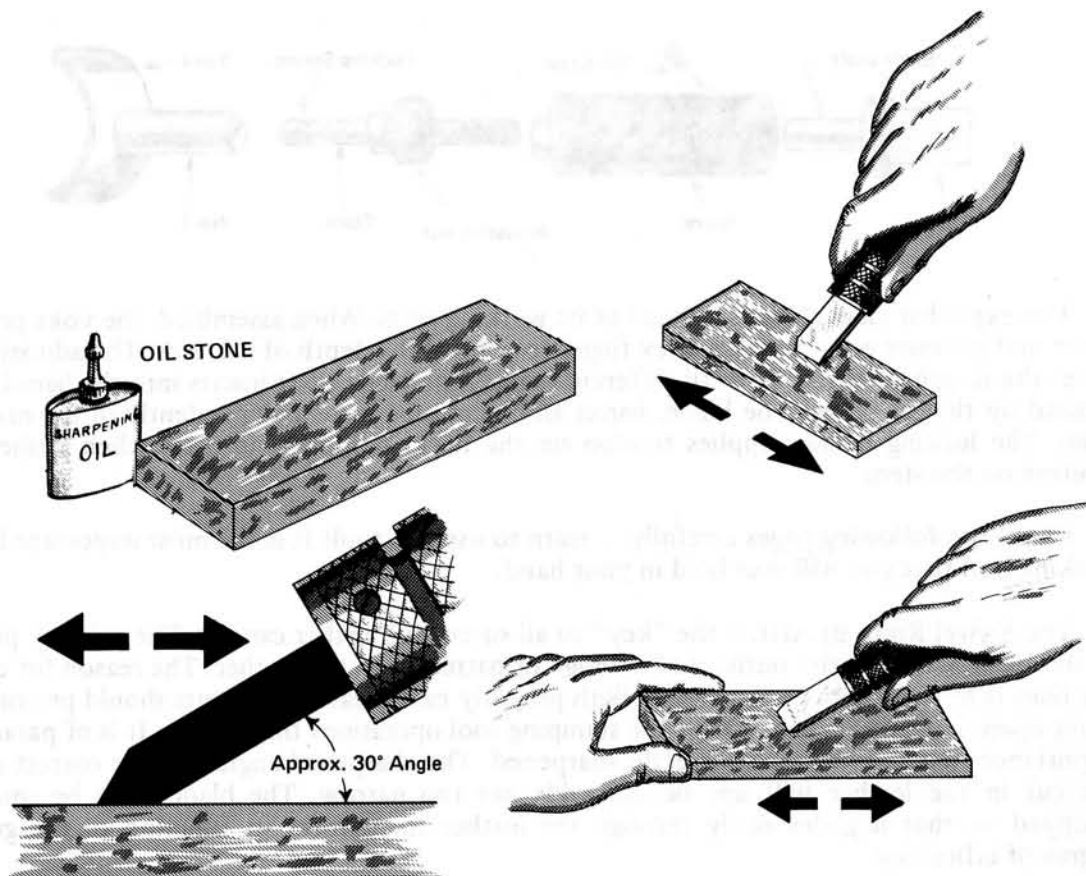
Hollow ground



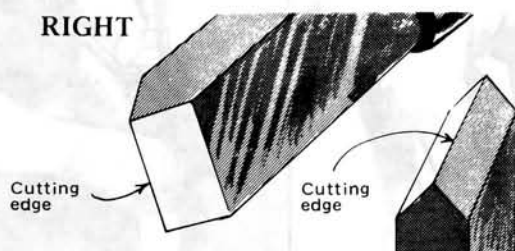
¼" angle

There are many types and widths of swivel knife blades available to the leather worker for a variety of cutting purposes. Have your leather dealer show and/or explain their uses to you.

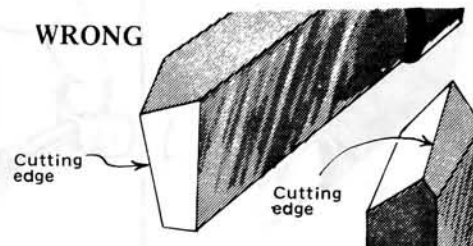
To sharpen the blade, use a fine grit oil stone. Insert the blade shaft into the barrel of the swivel knife and tighten the set screw with a small screw driver. Grasp the knife as shown. . . the yoke should be pressed firmly against the palm of your hand. Place the blade on the sharpening stone at the correct angle; maintaining this angle is important throughout the sharpening movements. DO NOT rock or roll the blade when sharpening, lest the cutting corners become rounded. Hold the knife firmly and flat. . . at the correct angle.



There are two generally accepted methods of sharpening the blade (see preceding page). . . use the method that is easiest and produces the best results for you. Hold the blade firmly against the Sharpener and apply plenty of pressure. . . especially if the blade is very dull or rough. Move the blade briskly back and forth across the Sharpener. Complete one side, then turn the blade over and sharpen the other side. Hold it **FLAT** and **FIRM**! The beveled sides of the blade should be perfectly flat and even. The cutting edge should be in the center of the blade. Considerable work may be required to even the beveled edges. Be persistent and as accurate as possible, as this is perhaps the most important part in leather carving. A properly sharpened blade will produce easier and smoother cutting. . . less fatigue. . . better results and more leather carving enjoyment.



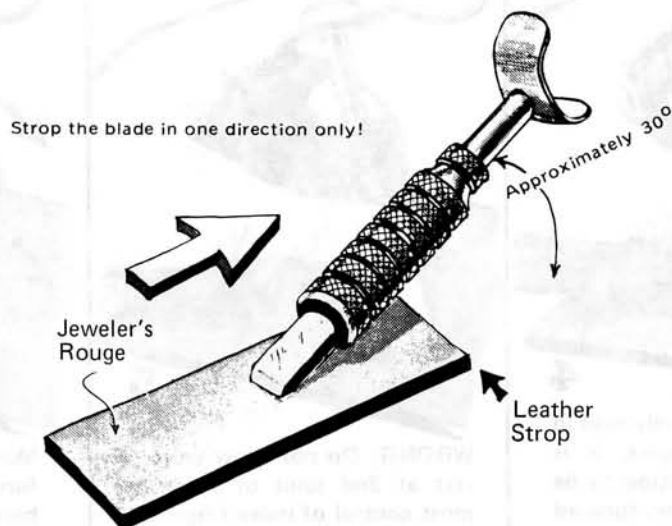
This blade was sharpened correctly. The beveled sides are sharpened flat and even. The cutting edge is straight and in the center of the blade.



This blade has the beveled sides unbalanced and uneven. The knife was held at different angles on each side. The angles are wrong and the cutting edge is not in the center of the blade. Resharpen the blade.

STROPPING THE BLADE

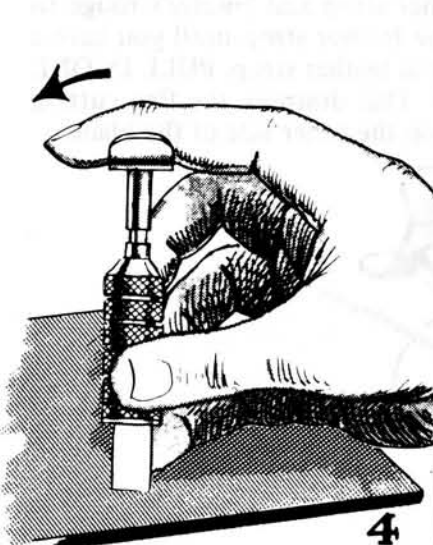
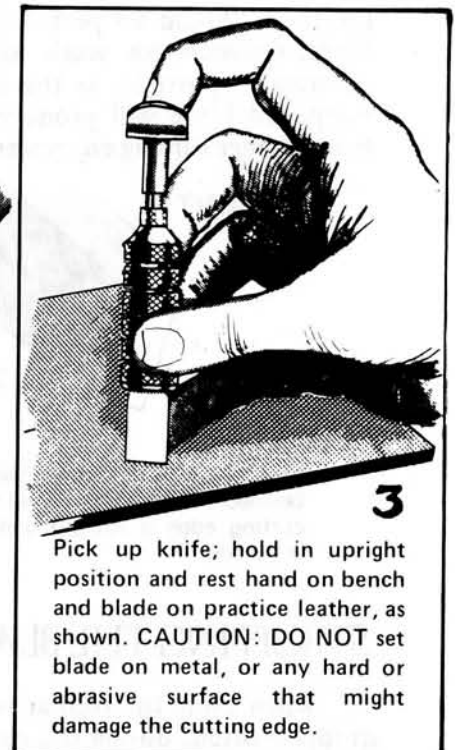
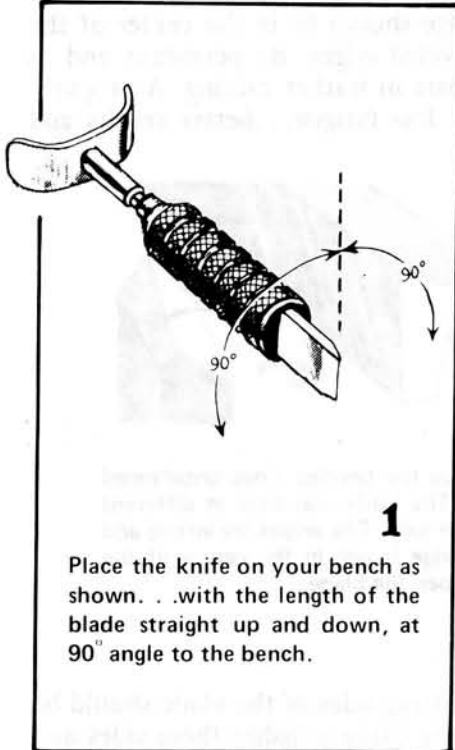
When using the regular swivel knife blades, the beveled cutting sides of the blade should be stropped often, during the cutting operations. **STROPPING** the blade polishes these sides and keeps the blade cutting smoothly, reducing "drag". Use a leather strop and jeweler's rouge to strop your blade. Rub jeweler's rouge into the flesh side of the leather strop until you have a light even coat. Hold knife at approximately a 30 degree angle to leather strop. **PULL IN ONE DIRECTION ONLY.** NEVER push the blade when stropping. This destroys the fine cutting edge. **PULL** the blade across the strop several times and then strop the other side of the blade.



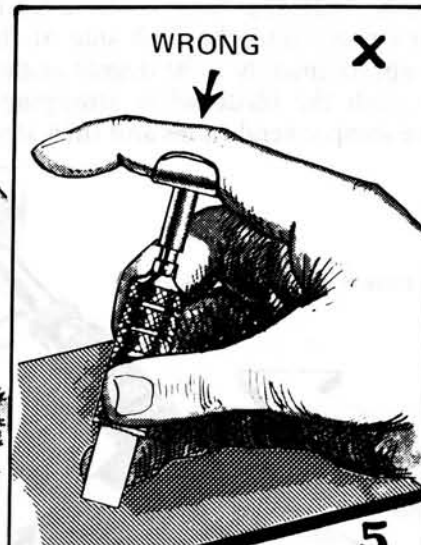
We cannot overemphasize the importance of keeping your blade sharp. As you work your projects, strop your blade often on the Polisher.

HOW TO HOLD THE SWIVEL KNIFE

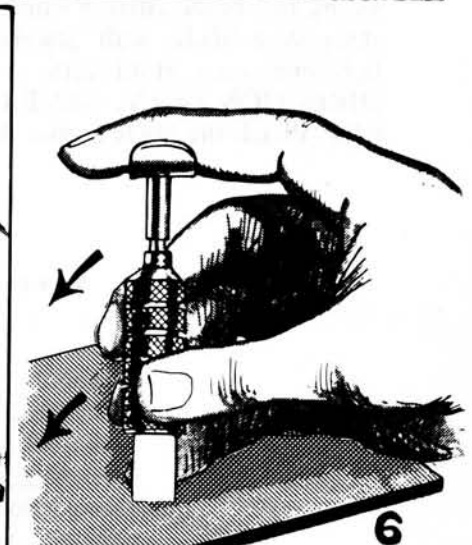
Learn to hold your swivel knife correctly. The way you hold the swivel knife will determine your success in cutting leather. Follow the simple steps below for aid in learning how to hold the swivel knife properly.



Since the knife is merely held in the tips of the fingers, it is obviously not in position to be used. Move index finger forward and rest on yoke at first joint of finger, as shown.



WRONG: Do not allow yoke to rest at 2nd joint of finger as most control of index finger will be lost.

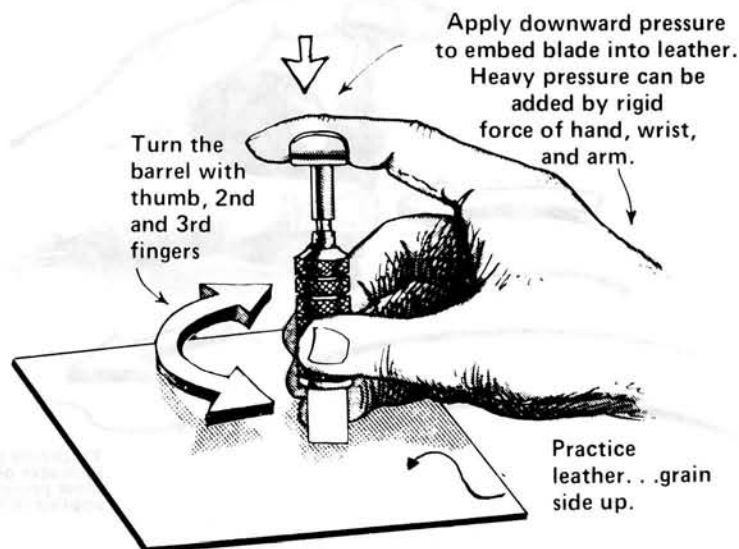


Move 2nd and 3rd fingers forward to more firmly grasp the barrel. Knife is now in correct position for use.

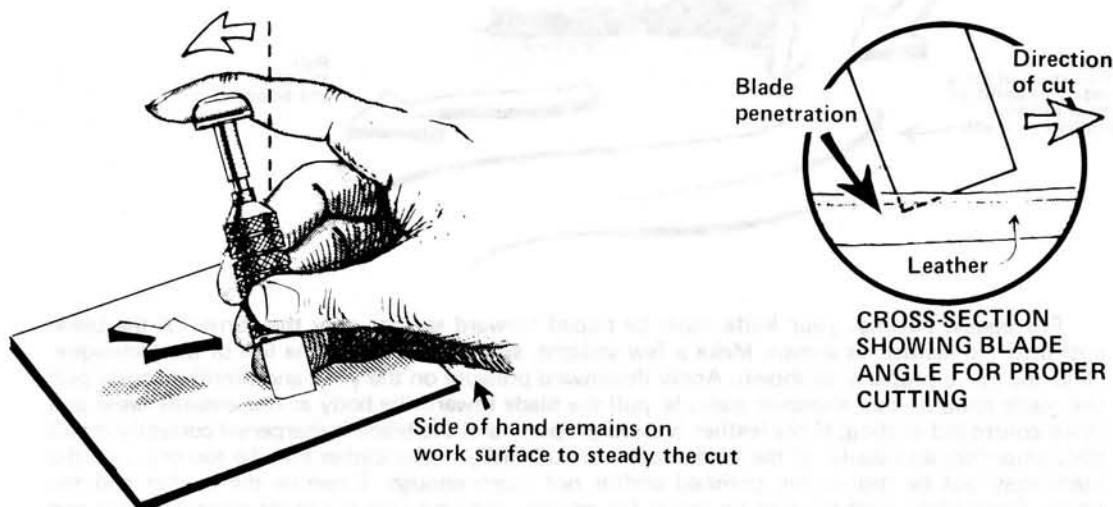
CAUTION: DO NOT set blade on metal, or any hard or abrasive surface that might damage the cutting edge.

HOW TO USE YOUR SWIVEL KNIFE

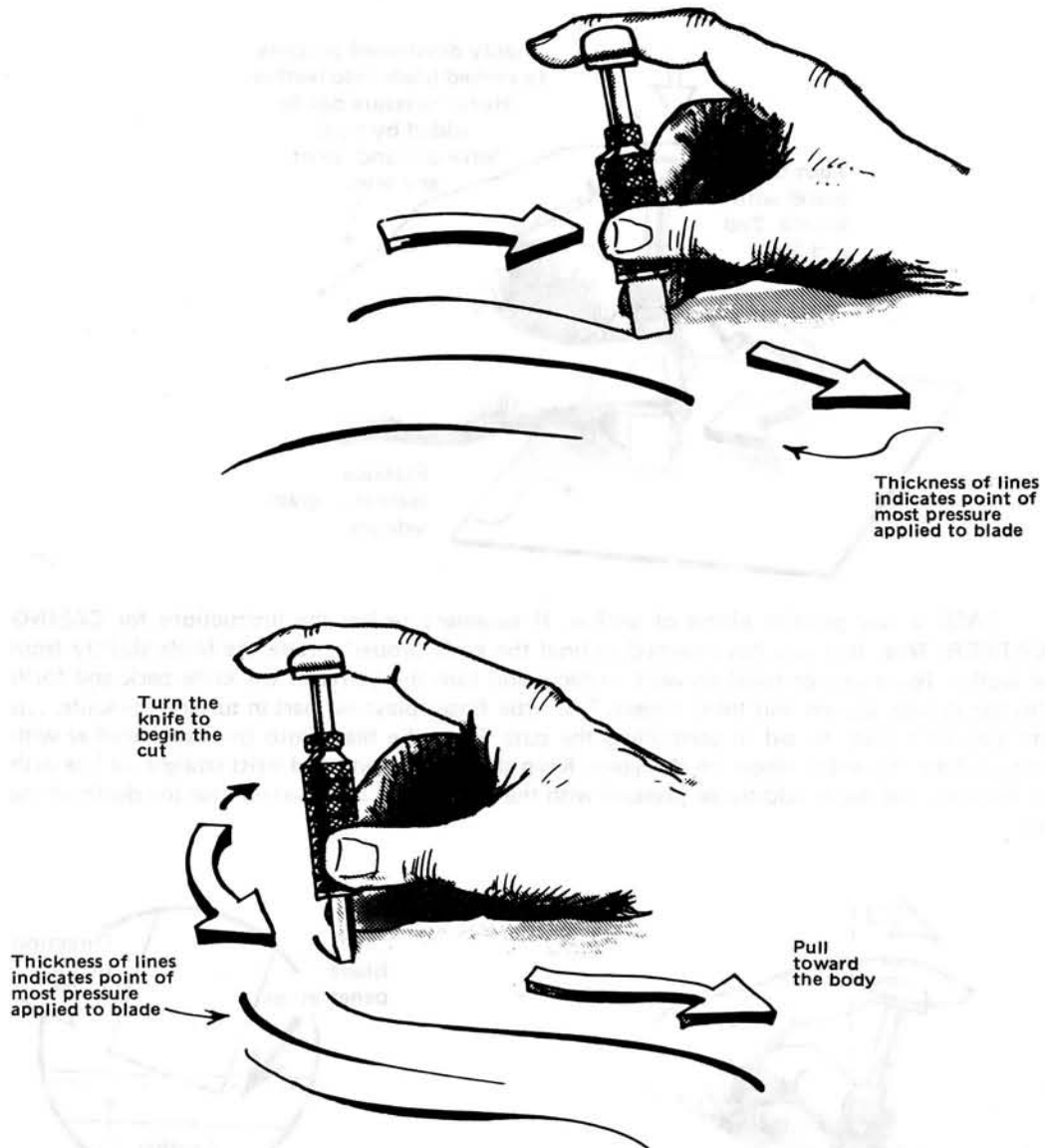
As soon as you have learned to control and use your swivel knife for free-hand carving, you will begin to enjoy the real thrill and rich satisfaction which leather carving offers. You can cut straighter lines, more graceful curves and scrolls in leather with your swivel knife than you can draw free-hand with pencil and paper. To achieve control of the swivel knife takes patience and concentrated practice. Relaxation is your key to successful control. Many students "try too hard". . . become tense and strained, which makes swivel knife control difficult if not impossible. Learn to relax. Be comfortably seated, and be sure to have excellent light for freedom from eye-strain and lack of shadows in your working area.



CASE a few practice pieces of leather. If necessary review the instructions for CASING LEATHER. Now that you have learned to hold the knife properly, raise the blade slightly from the leather (keep side of hand on work surface) and turn the barrel of the knife back and forth with the thumb, second and third fingers. The little finger plays no part in turning the knife. . . it acts only as a pivot to aid in controlling the cuts. Press the blade into the cased leather with pressure from the index finger on the yoke. Keep the finger, hand and wrist straight, in line with the forearm, and apply additional pressure with the arm. This is how you control the depth of the cuts.



Practice a few light curves. Experiment with varying degrees of pressure with each cut to practice controlling the depth. Try to maintain an even depth throughout some of the cuts. (NOTE: Proper cutting depth for outlines of designs is approximately one-half the thickness of the leather.) Keep the side of the hand and little finger in contact with the working surface and/or leather at all times. This helps steady the cutting movement. Use your free hand to hold or turn the leather to make cutting easier. Turn the leather as often as necessary to keep the cuts coming toward the body and to keep the cutting hand from a cramped or awkward position. Practice cutting freely; hesitation makes ragged cuts.

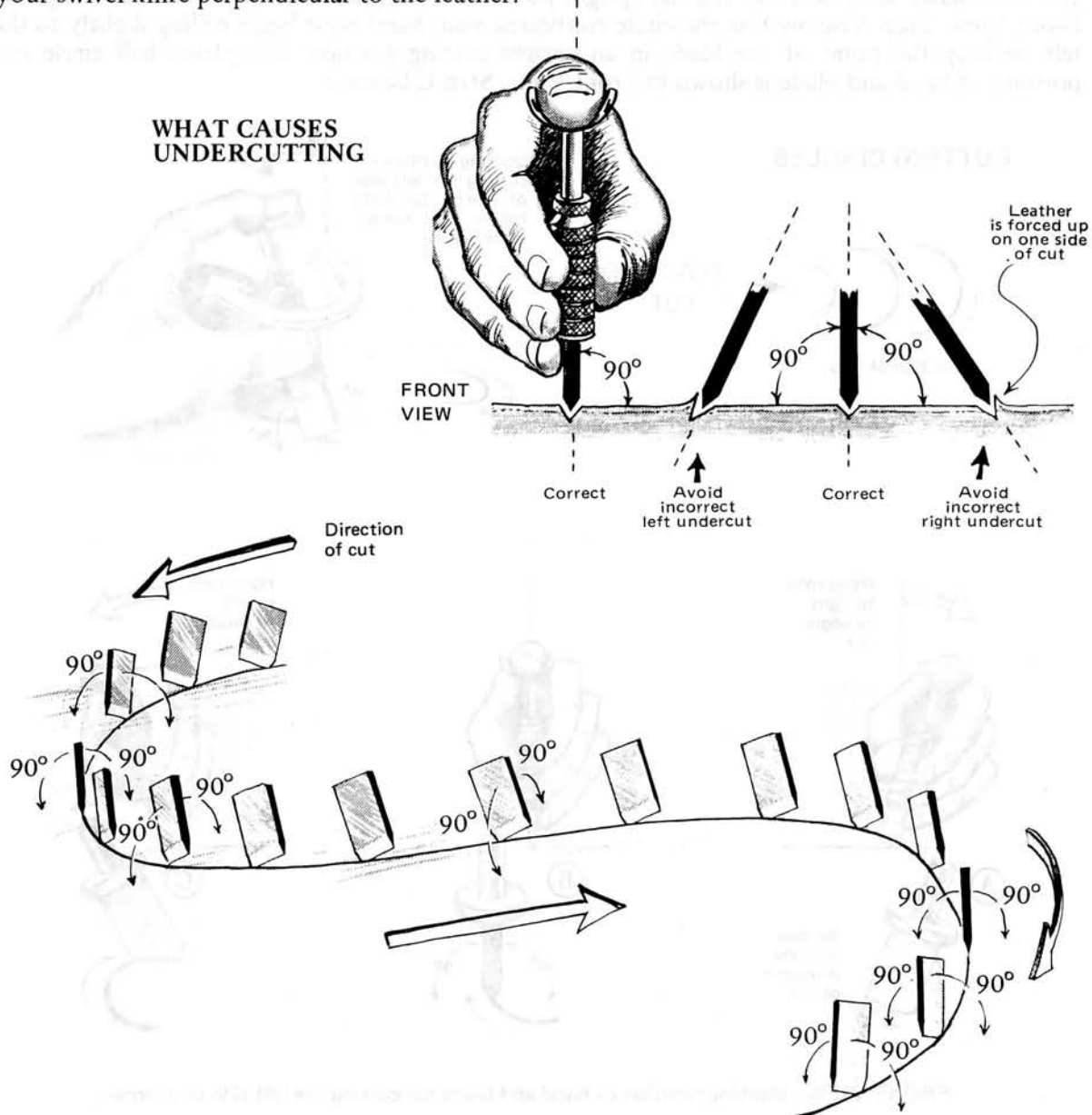


For easiest cutting, your knife must be tipped forward so that only the corner of the blade cuts into the leather, as shown. Make a few straight, simple cuts to get the feel of the technique. Hold the knife properly as shown. Apply downward pressure on the yoke and simultaneously pull the blade toward you. Whenever possible, pull the blade toward the body as this ensures easier and more controlled cutting. If the leather is cased properly and the blade is sharpened correctly it will glide smoothly and easily. If the blade does not pull easily... the leather may be too dry... or the blade may not be thoroughly polished and/or not sharp enough. Examine the leather and the blade. Remember, leather must be moist for proper, easy cutting; the blade must be sharp and polished well!

UNDERCUTTING is caused by leaning the hand to the left or to the right while cutting. This usually happens when the student tries to get a better look at his cutting operation. Often the blade "cuts under" the surface of the leather on one side of the cut, leaving a thin, raised, undesirable edge. This makes it difficult to use the stamping tools in the operations that follow. It also distorts the design to some degree, depending upon the detail of the design.

See illustration for examples of correct cutting and incorrect undercutting. Always hold your swivel knife perpendicular to the leather.

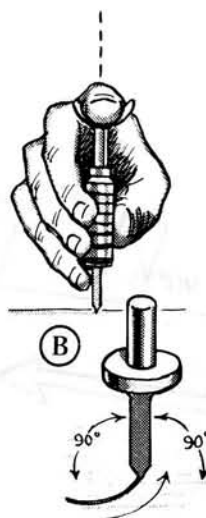
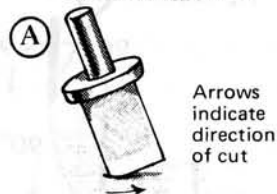
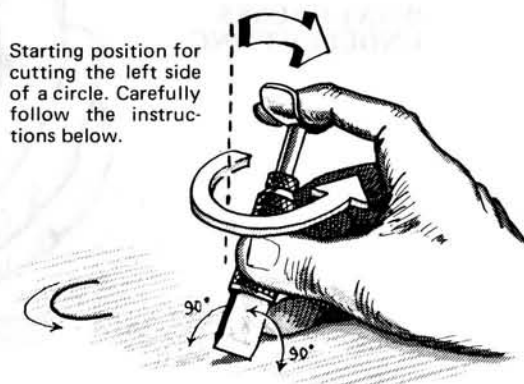
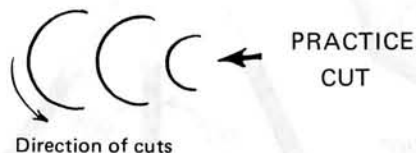
WHAT CAUSES UNDERCUTTING



The diagram above illustrates the proper position of the knife blade while negotiating curves. All swivel knife parts have been omitted. . . and only the cutting part of the blade is shown, to more clearly illustrate the proper function of the blade. The flat of the blade always parallels the cut. The blade is tipped forward to obtain the correct cutting angle, but NEVER leaned to the right or the left. It must always remain perpendicular to avoid undercutting. . . but must be tipped forward to the proper cutting angle.

To make circular cuts, turn the barrel of the swivel knife with thumb and fingers. Hold the knife in the regular position with the blade parallel to the arm; pointing toward your body. Now turn the barrel clockwise until the blade is at right angles to your body. Slightly roll your hand to the right until the blade is tipped forward to the proper cutting position. (See sketch below and Front View, Step A). Apply pressure on the yoke and begin the cut. Simultaneously begin turning the barrel and pull the blade to begin cutting circle. Your hand must begin to return at once from the rolled position. . .to the straight up position. . .and as one fourth of the circle is cut, your hand must be in the normal upright position to keep the blade from undercutting (see Front View, Step B below.) As the circle continues, your hand must begin rolling slightly to the left to keep the point of the blade in an upright cutting position. Completed half circle and position of hand and blade is shown in Front View, Step C below.)

CUTTING CIRCLES

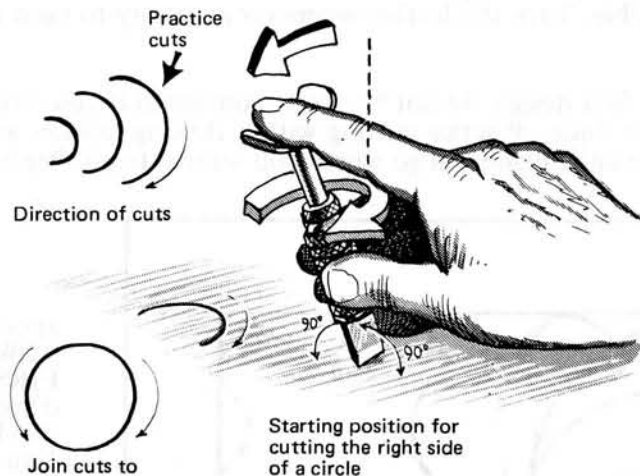


FRONT VIEW: showing position of hand and blade for cutting the left side of a circle.

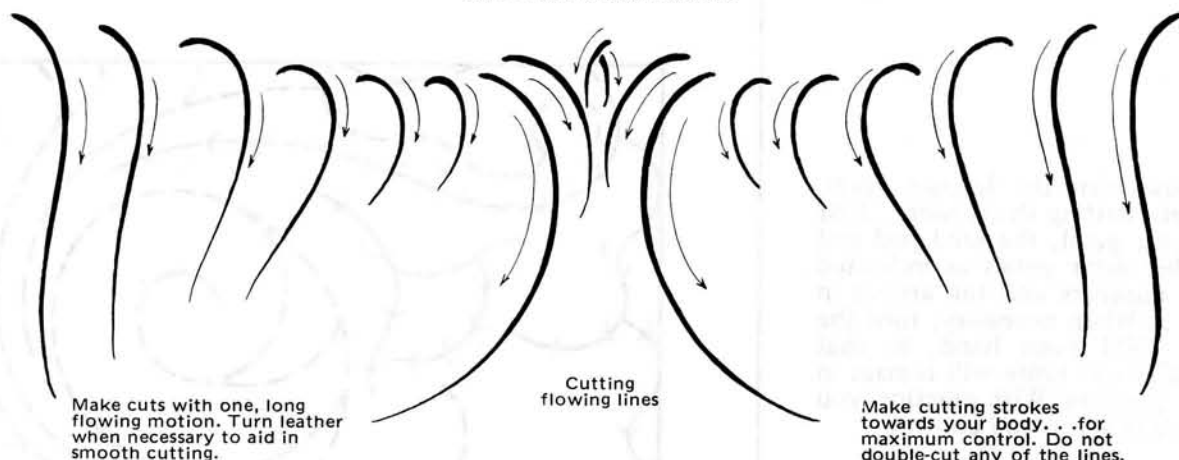
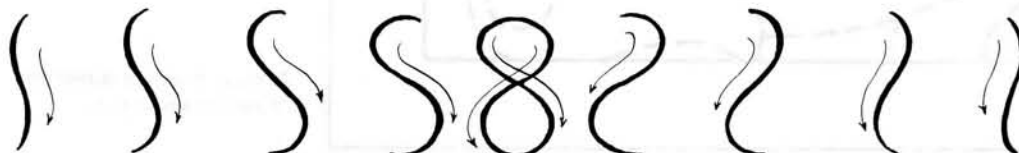
Cutting and rolling movements are made simultaneously. A great deal of practice will be required to coordinate these movements. Once acquired, cutting half circles will be effortless. Practice cutting different half-circle sizes. NOTE: Never go over cuts a second time.

To cut the right side of a circle. . .simply reverse the steps as illustrated in front view above.

In most instances, the student favors cutting or turning the knife in one direction. He will usually practice in that direction. It is important, however, to practice cutting in all directions. . .and especially in the direction that is most difficult. It is obvious that this will require the most practice. Proficiency with the swivel knife can only be obtained with practice!



PRACTICE EXERCISES



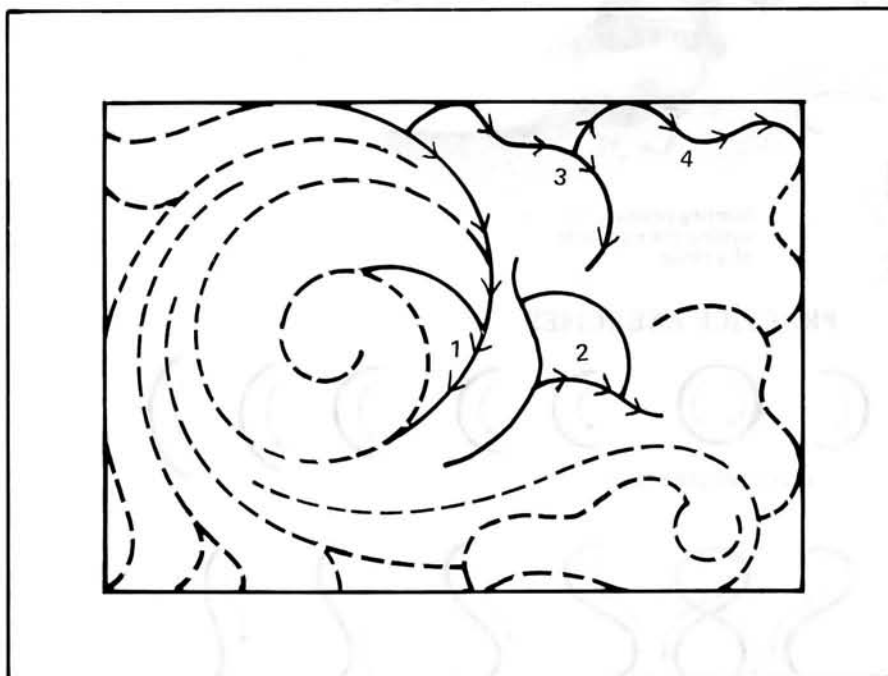
NOTE:

Depth and length of cuts are made with one motion. Do not re-cut any lines to make them deeper or to correct their flow. Practice for this control!

HOW TO CUT THE DESIGN

Usually, foremost objects are cut first. . .start with the border. Then cut the flower, scroll and leaves as shown below. As previously instructed and to facilitate cutting, make all cuts toward the body as much as possible. Turn the leather whenever necessary to keep the hand from becoming cramped or strained.

When cutting this first design, do not be overly concerned if you stray from the lines. Do not try to recut any of the lines. Practice cutting with a flowing motion and soon the cuts will be easily controlled. . .the knife blade will go where you want it to go. Begin cutting as in Figure 1.



Turn the leather so your design appears as shown at left in Figure 1. **ALWAYS CUT THE BORDER FIRST!** Small arrows indicate the direction of the rest of the cuts, the numbers indicate their sequence. You will note the base of the flower is cut first; next the small center petal; then the outside petal edges . . . all while the hand and the knife blade are in position, requiring the least amount of effort.

Arrows indicate direction of swivel knife cut.

FIGURE 1

Now turn the leather again. Complete cutting the flower. . .first the center petal, the seed pod and then the outer petals as indicated by the numbers and the arrows in Figure 2. When necessary, turn the leather NOT your hand, so that your hand and knife will remain in correct position. With practice, you will acquire speed and control.

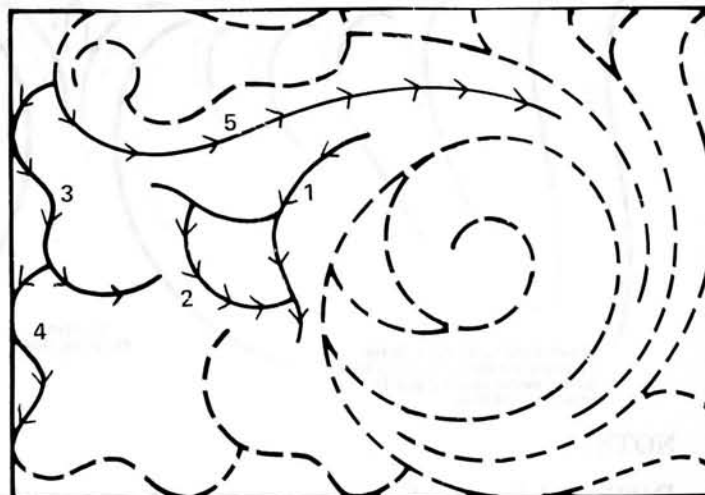


FIGURE 2

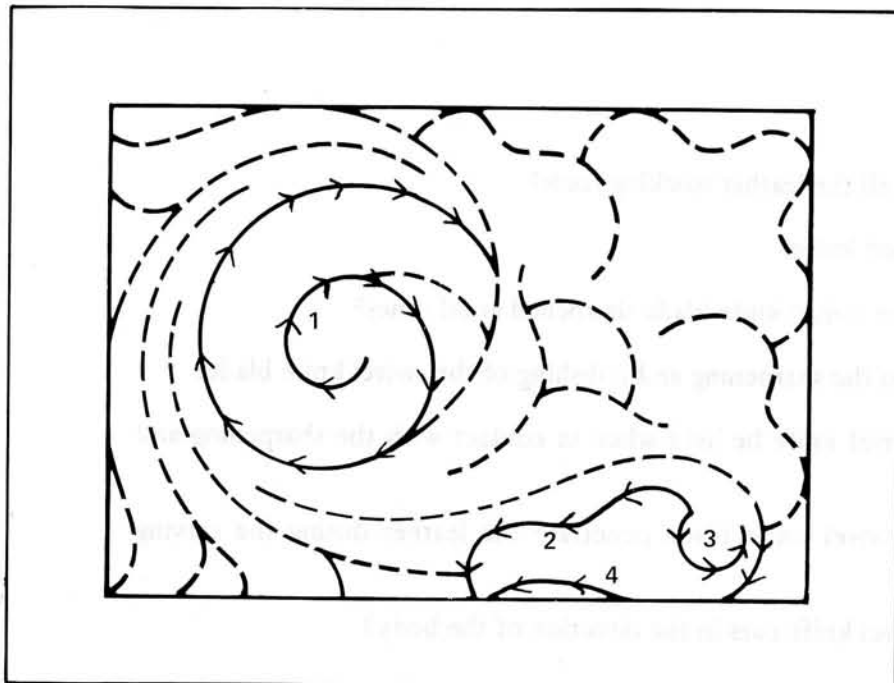


FIGURE 3

Turn leather again as in Figure 3 and cut the scroll and small petals on leaf. Continue making the swivel knife cuts following the numerical order shown in Figures 3 and 4.

Arrows indicate direction of swivel knife cut.

BE SURE YOUR BLADE IS SHARP! STROP IT OFTEN ON THE LEATHER STROP!

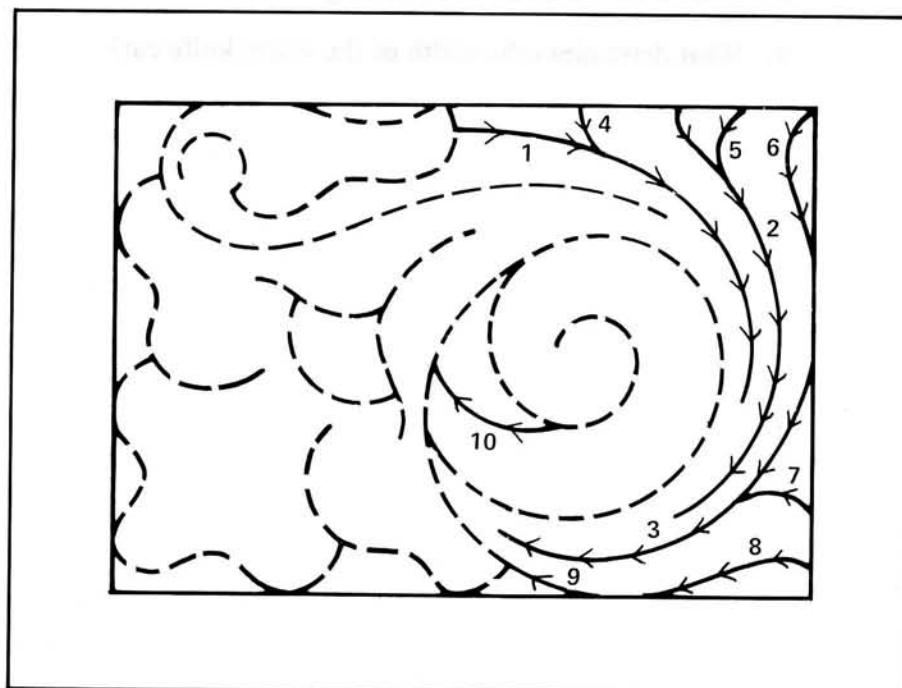


FIGURE 4

THE SWIVEL KNIFE : REVIEW TOPICS

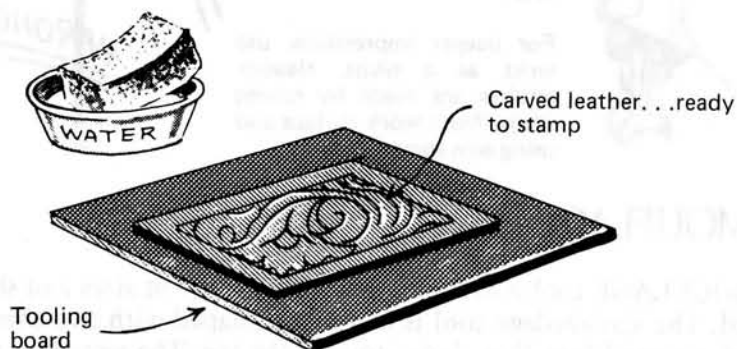
1. What is the most important of all the leather working tools?
2. What is the purpose of the swivel knife?
3. Why is it important to keep the swivel knife blade sharpened at all times?
4. What equipment is necessary to the sharpening and polishing of the swivel knife blade?
5. At what angle should the swivel knife be held when in contact with the sharpening and polishing surface?
6. To what depth should the swivel knife blade penetrate the leather during the carving process?
7. Why is it best to make the swivel knife cuts in the direction of the body?
8. What is the cause of undercutting?
9. What determines the width of the swivel knife cut?



4

GETTING TO KNOW YOUR OTHER LEATHER WORKING TOOLS

Now you are ready to develop the design with STAMPING tools. To stamp leather it must be placed on a hard, smooth surface. A tempered masonite board provides a good surface. The best working surface is a piece of marble at least $\frac{1}{4}$ " thick. It will stay glass-smooth for years.

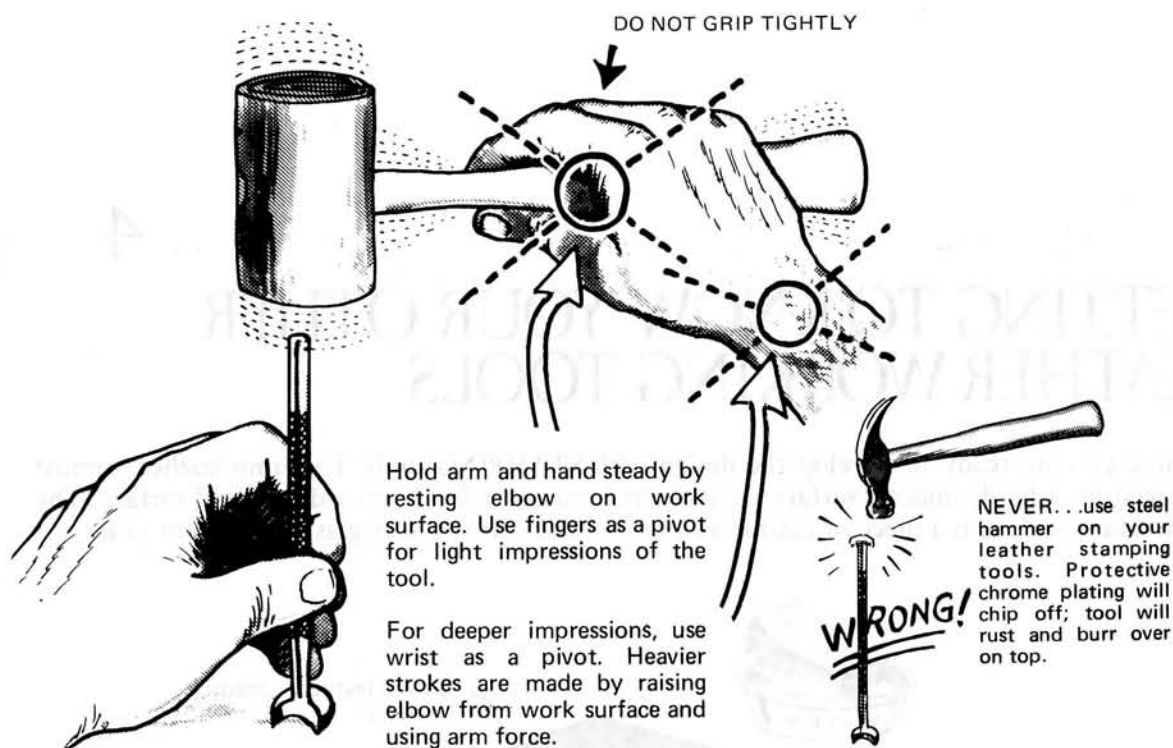


STAMPING tools are designed to obtain specific effects in the development of the design. Six of the most used Stamping tools are described on the following pages. They can be used in countless combinations to enable you to be creative and original in your development of a design. However, each basic tool is available with variations in size, serration pattern, curve and slope.

THE MALLET

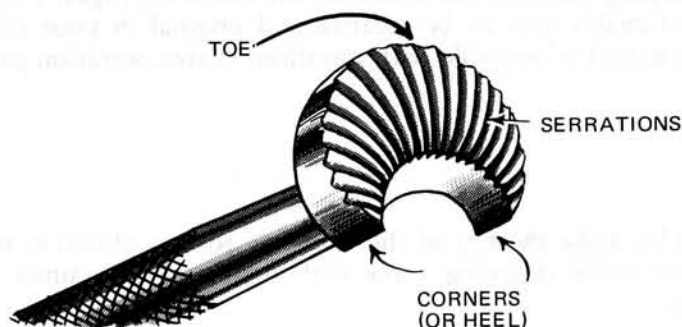
The MALLET is used to strike the top of the stamping tool to obtain its impression in the leather. CAUTION: Never strike stamping tools with metal faced hammer. This will cause permanent damage to tools.

The stamping tool is generally held in a perpendicular or upright position when struck with the mallet. The mallet is held as shown in the illustration. The mallet handle should be held securely, but in a relaxed manner. Do not grip the handle tightly. It is held with the fingers, rather than the palm of the hand. Note, also, the handle is held almost in the center for best balance. Held in this manner, the fingers or wrist serve as a pivot (a turning point) for striking the mallet against the stamping tool. The elbow should rest on the work surface during most of the striking action. When deep tool impressions are desired, hold the handle more tightly toward the end. Lift the elbow from the bench for more force. In any case, . . . hold the mallet in the most comfortable position for you!

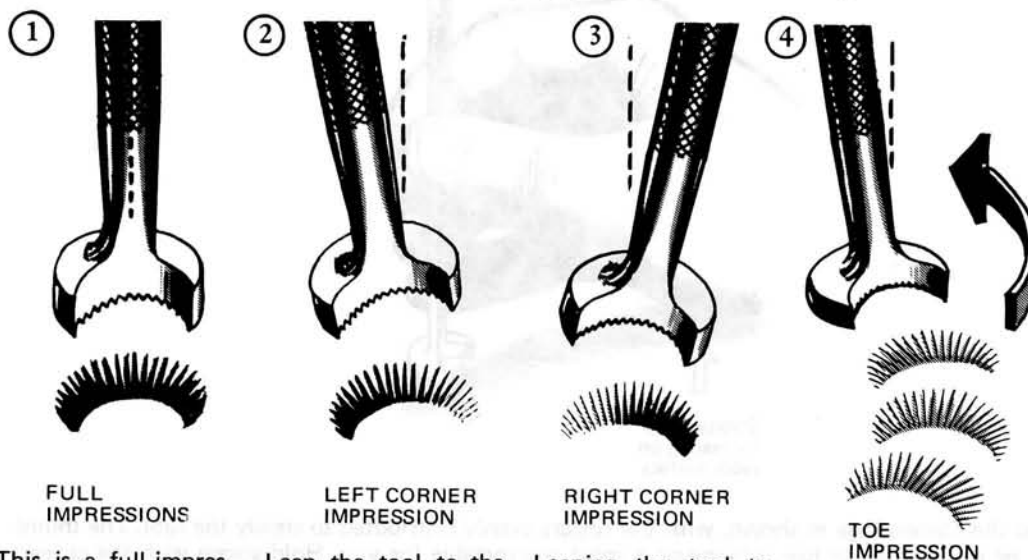


THE CAMOUFLAGE

The CAMOUFLAGE tool is available in a wide variety of sizes and shapes to fit almost every stamping need. The Camouflage tool is half-moon shaped with two sharp corners (or heels) and has a rounded, serrated face that slopes toward the toe. The serrations generally fan out from a central focal point into a sun-burst effect. The purpose of this tool is to texture certain areas of a pattern to add to its beauty and flow of design.



The moisture content of the leather should be "just right". The drawings below show the impressions made by the tool when held in varying positions and struck by the mallet.



This is a full impression of the stamp. Hold the tool straight up and down, then strike sharply with the mallet so that all lines are equal in depth.

Lean the tool to the left. Hold securely with hand so tool does not slip when struck with the mallet. Impressions on right side should "fade" to nothing.

Leaning the tool to the right fades the left corner impressions and firmly imprints the right corner of the tool. Hold tool firmly.

Here the tool is tipped forward on the toe so that the corners do not dig in. The tool is usually tapped lightly in this position.

PHOTO PATTERN

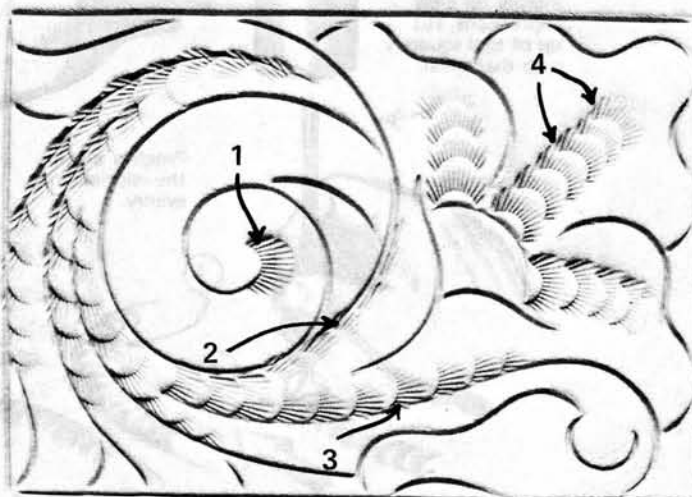
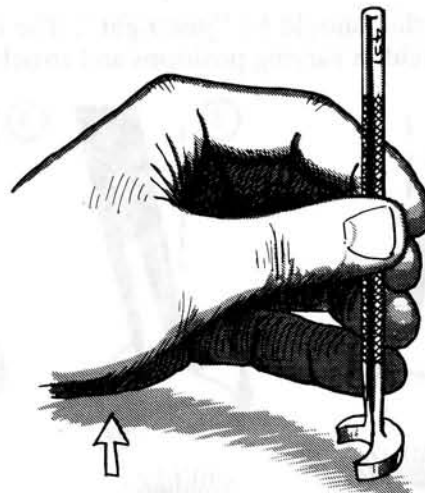


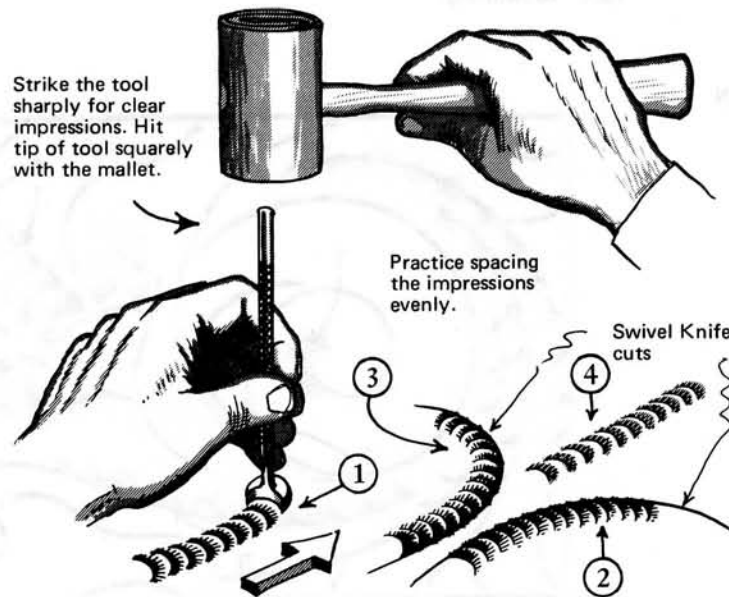
Photo above shows by number tool impressions created by the Camouflage tool of corresponding number in the illustrations at top of the page.

THE PHOTO PATTERN is a photograph taken of carved and/or stamped leather reproduced in actual size, showing position and use of tools. It is presented as an aid to the leather worker when other forms of instruction or visual and physical aids are not available. An important part of leather work is learning to "read" Photo Patterns.



Steady hand
by resting on
work surface.

Hold the Camouflage as shown, with the fingers evenly distributed to steady the tool. The thumb can be placed high or low, whichever is most comfortable for you. Hold stamp with the corners facing you, as shown above. The side of hand and left arm should rest on the work surface to aid in steadying and controlling the tool. The knurled shaft permits controlled turning of the stamp by rolling between thumb and fingers.

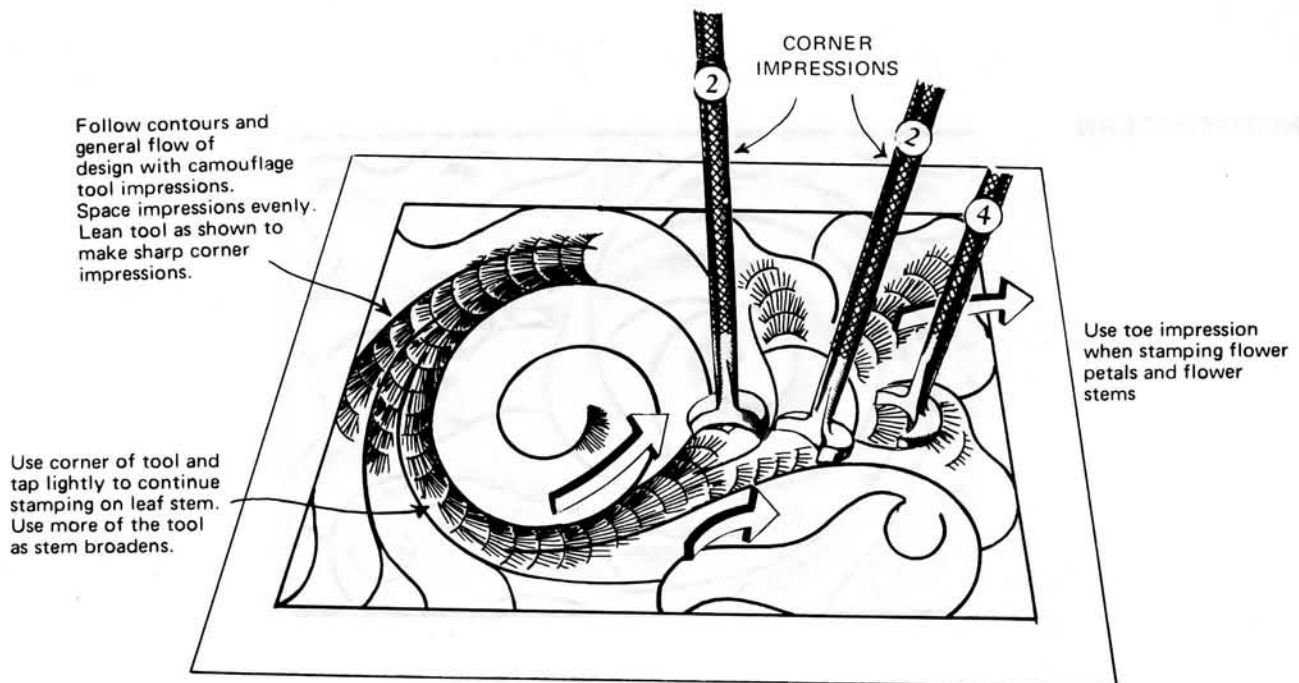


Strike the tool
sharply for clear
impressions. Hit
tip of tool squarely
with the mallet.

Practice spacing
the impressions
evenly.

Swivel Knife
cuts

Always stamp the impressions away from you, for better visibility and control. Practice the exercises shown above. . . using the four techniques on the preceding page. Space the impressions evenly! After some experience with the tool, you will achieve a stamping rhythm enabling you to advance the impressions evenly and rapidly.



The drawing above shows the Camouflage tool in use. As the contour of the design changes, turn the "Cam" so that the serrations are parallel to the direction of the pattern flow. Take particular note of this on the long curve on the base of the flower. Notice how the tool must be slightly turned with each impression. When stamping around the stems, lean the tool so that the corner impression is deepest at the cut line. The impressions should fade out at the other corner. Use toe impressions on stems and flower petals.

THE PEAR SHADER

The PEAR SHADER is a pear-shaped tool for making a three-dimensional and life-like effect in the design. The tool "shades" or "contours" areas outlined by the swivel knife. The shading face of the tool is rounded in all directions so that sharp or blunt edges will not mar the leather. The moisture content of the leather should be "just right". (Slightly on the dry side).

The shading should conform to the general shape of the design. The Shaders are "walked" to depress areas away from cut lines, shaping flower petals, leaves, etc. in a realistic manner. The shading operation burnishes the leather to a rich, dark contrasting color. The depth of the impression and darkness of color are controlled by the force of the stroke of the mallet on the Shader tool top. Strike the tool forcefully for deep impressions; lessen the force to diminish the impression and the color.

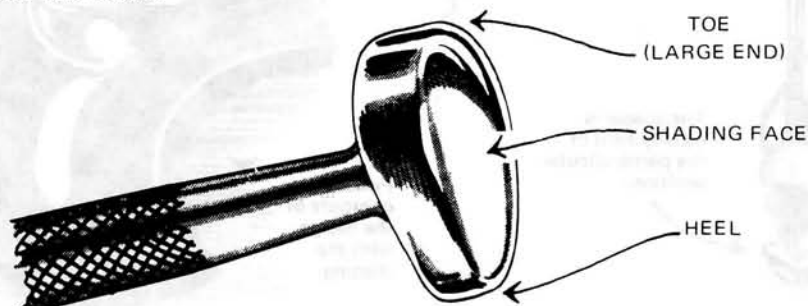


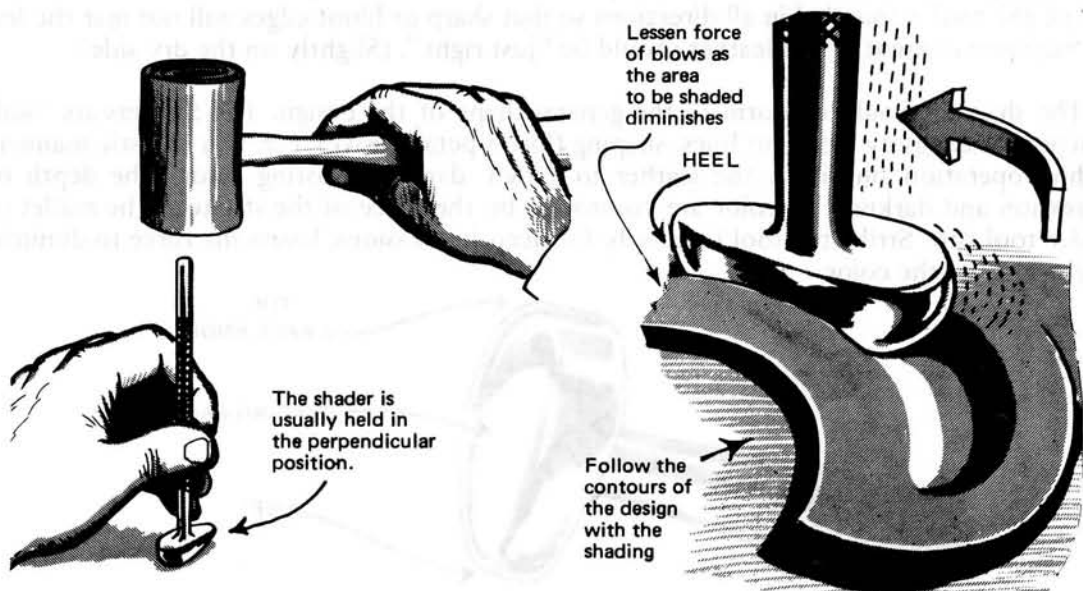
PHOTO PATTERN



Photo shows the correctly shaded areas. Note how the deep impressions fade to nothing.

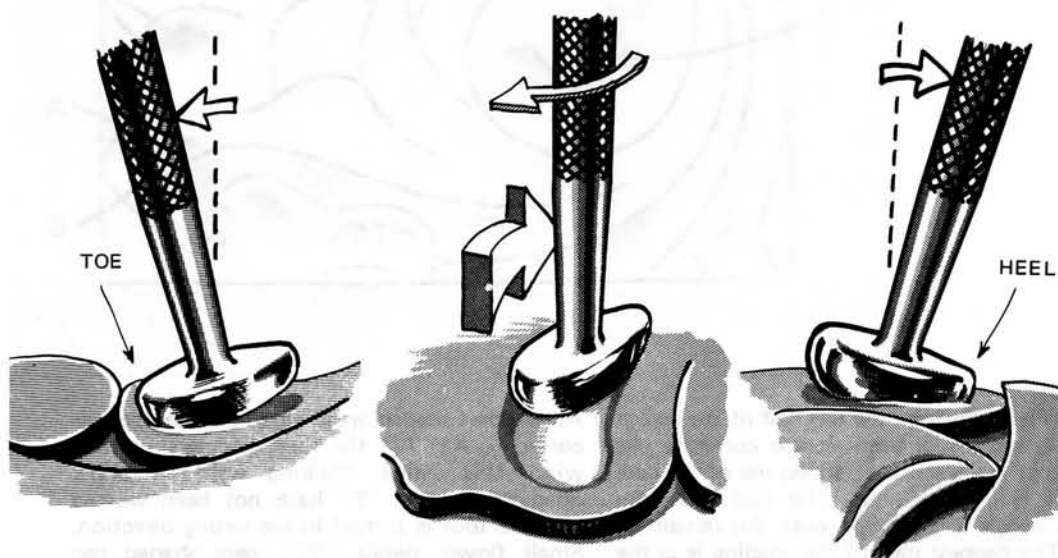
For smooth shading, a small change of position of the Pear Shader between strokes of the Mallet is necessary. This is called "walking" the Pear Shader. Uneven shading is caused by not moving the tool along the surface evenly between each stroke of the Mallet.

"Walking" is done by moving the Shader about $\frac{1}{16}$ " as it springs up after being hit by the Mallet. Move the tool along the surface of the leather in direction shading is desired, using less force as the shading fades out. Keep your hand in a comfortable, relaxed position.



It takes practice to learn to shade smoothly. Start by developing a rhythm: move-hit, move-hit, move-hit, etc. Practice this until you increase speed. Soon you will be shading smoothly and easily.

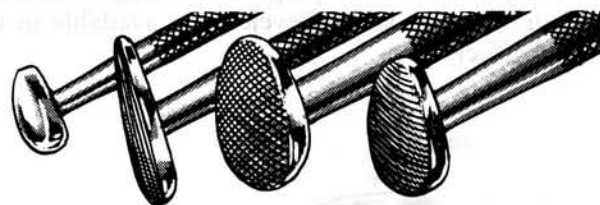
The Shader can be "walked" over a very large area and can be turned slightly in the fingers between strokes to broaden or lessen the width of the shaded area and to control the direction of the shading.



The toe of the tool can be used for shading small, rounded areas where the full length of the tool would be too long. Re-walk the Shader over any "lumpy" shaded areas to smooth them out.

When an area wider than the tool is to be shaded, the tool can be turned slightly. A broader area is shaded with a minimum amount of stamping as the Shader is used partially broadside.

Shade small and pointed areas too small for the full width of the tool by tipping the Shader back on its heel. Use only the narrow part to dish the area. Hold tool firmly when tipping to keep it from slipping.



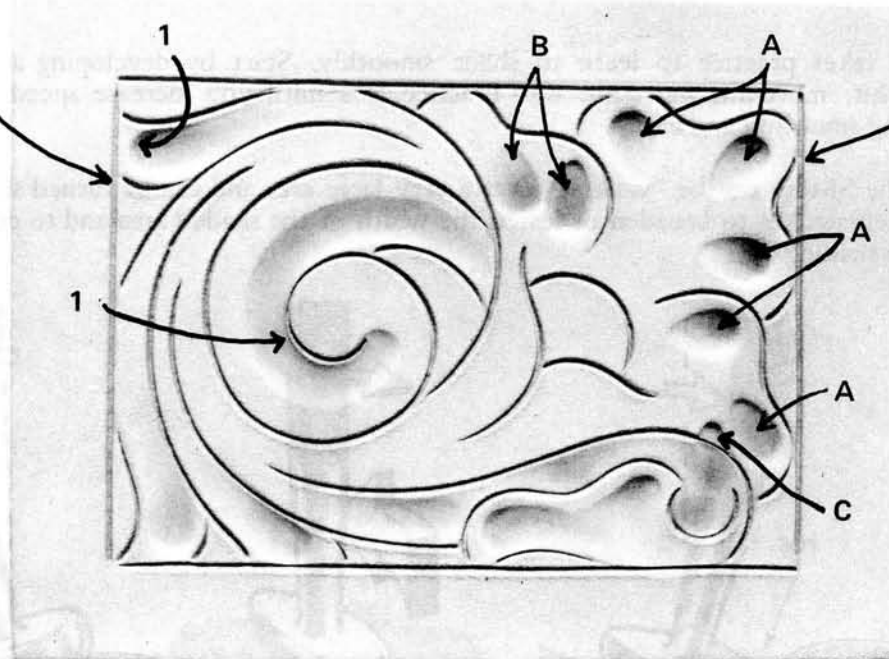
SMOOTH LINED CHECKED RIBBED

There are many sizes, shapes and textures of Pear Shaders available for every shading need

PHOTO PATTERN

RIGHT

WRONG



In this Photo Pattern, the left half of the design and the scroll have been shaded correctly. At the top of the leaf, No. 1 shows use of the heel of tool in pointed areas. The tool was then turned about and walked over the remaining areas. The deepest part of the shading is at the tips of the leaves, gradually fading away.

All lettered shaded areas have been stamped incorrectly. At "A", the tool was merely struck with the mallet. Walking was not done. Shadings marked "B" have not been walked and the tool is turned in the wrong direction. Small flower petals, "B", were shaded too heavily. Shading is out of bounds at "C".

THE BEVELER

The purpose of the BEVELER is to bring the design into bold relief, creating a three-dimensional effect. Usually only one side of the swivel knife cut is beveled down. This is not a strict rule; some designs require beveling on alternate sides of a cut or sometimes on both sides.

The beveling surface of the Beveler slopes toward the heel. The deepest part of the bevel is usually next to the cut line of the design, with the sloping bevel fading toward the background areas. Hold tool straight up and down, not at a slant. Bevelers are available in many sizes and textures for creating special and varied effects.



The face of the Beveler always faces the cut line of the design. Keep the face of the bevel generally toward you. Turn the leather to keep the tool in this position. The toe of the bevel is placed directly into the cut. When the Beveler is struck with the mallet the action compresses the leather on one side of the cut, creating depth. This action at the same time burnishes (darkens) the leather and gives contrast to the design. The moisture content of the leather should be "just right" (slightly on the dry side) for beveling.

PHOTO PATTERN

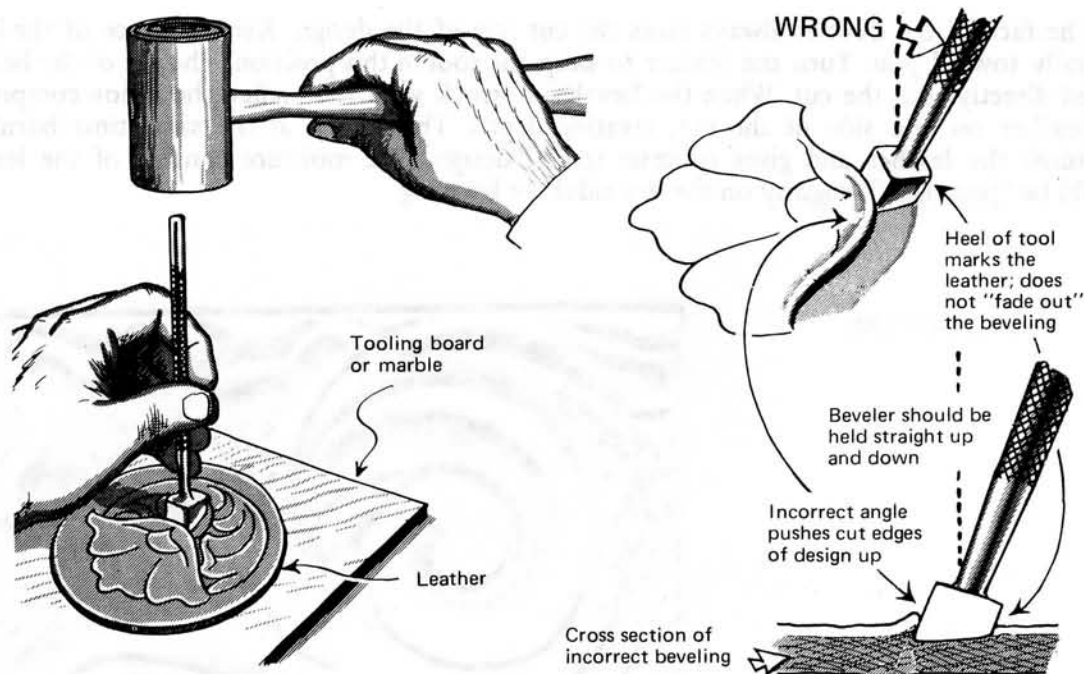


This Photo Pattern shows all the lines properly beveled, following the stamping operations of the "Cam" and Pear Shader tools.

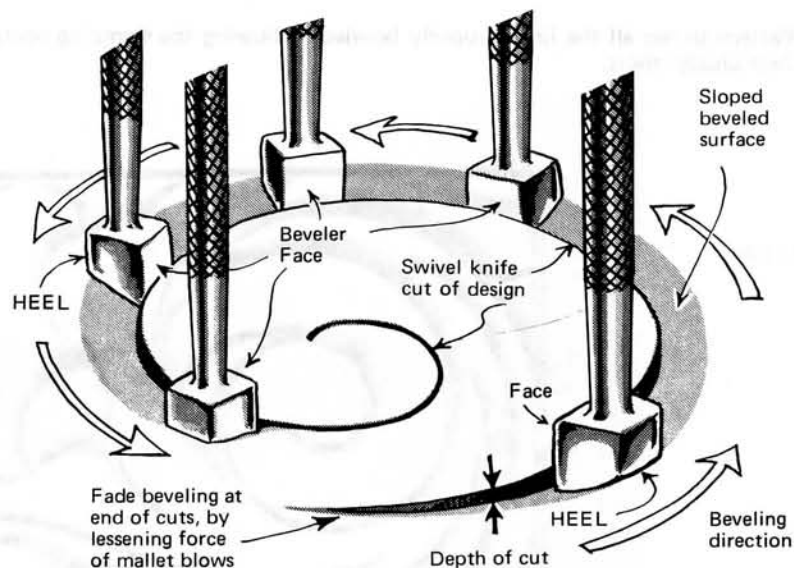
PHOTO PATTERN



This Photo Pattern shows only the beveling, properly executed, to clearly illustrate the correct sides of the lines on which to bevel.



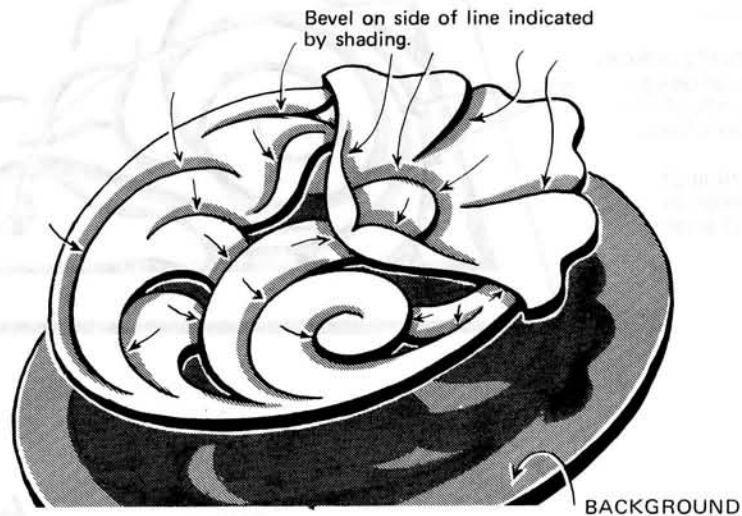
HOW TO HOLD THE BEVELER. Hold the Beveler straight up and down as shown in the illustration above. Get comfortably seated at your work area. Have a good light with no shadows over your working area. Rest your arm and hand holding the Beveler on the work surface, as well as the elbow of your mallet hand. Hold the face of the Beveler towards you.



For smooth beveling, "walking" the Beveler, as you learned with Pear Shader is necessary. "Choppy" beveling is caused by not moving the tool along the surface evenly between each stroke of the Mallet.

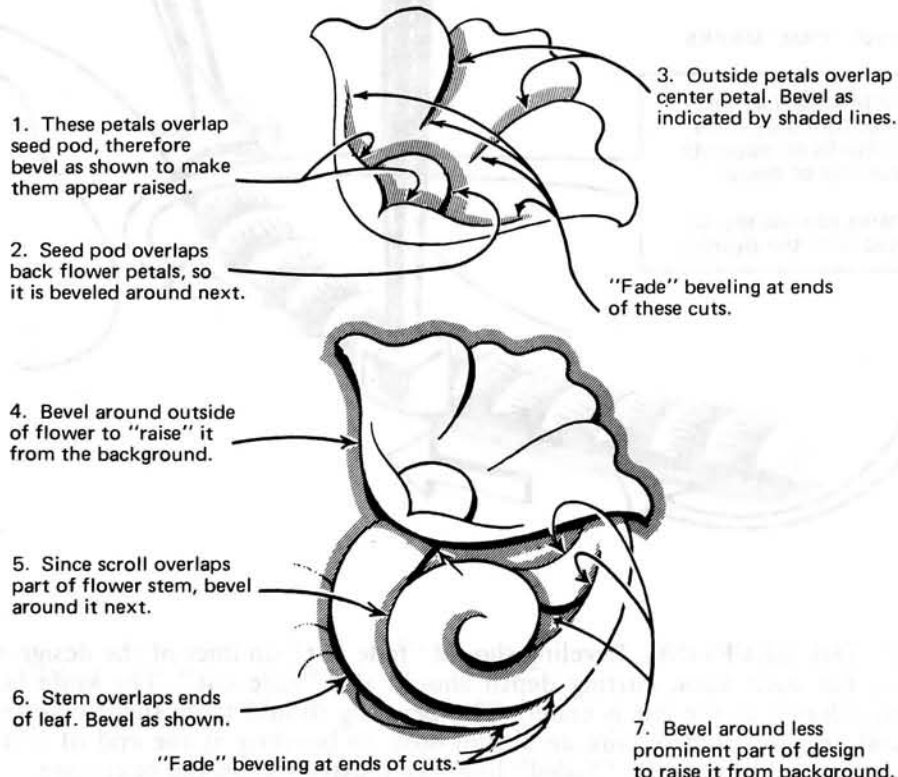
It takes practice to learn to bevel smoothly. Start by developing a rhythm: move-hit, move-hit, move-hit, move-hit, etc. Increase your speed as you become familiar with the rhythm of the two movements. Practice! Soon you will be beveling with ease!

A common question is "Which side of the line do I bevel down?" A Transfer Pattern is not always clear on this point. Usually the bevel is around the outside part of the design you want to appear raised. If in doubt, take a pencil and shade around the lines on the Transfer Pattern as you think they should be beveled. If it does not look right, erase and try again. A good rule to follow: **BEVEL AROUND THE FOREMOST OBJECTS FIRST!**



The drawing above shows the design distinctly separated from the background to emphasize that all background areas must be beveled down and away from the design. This includes areas inside the design, as well as the surrounding background area. To add depth and contour to the rest of the design, it must be beveled as indicated by the shaded areas. The instructions below are added to further clarify any of your questions.

BEVEL FOREMOST OBJECTS OF THE DESIGN FIRST

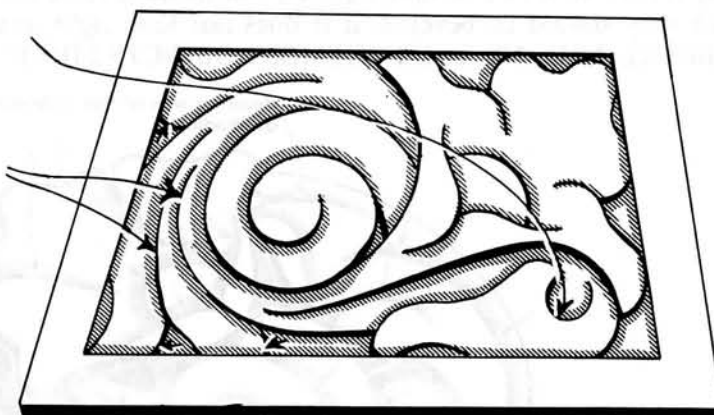


TURN LEATHER AS OFTEN
AS NECESSARY TO MAKE
YOUR BEVELING EASIER.

8. To make the leaf turn-back
appear raised, it must
be beveled as shown.

Cuts of design usually indicate
overlapping parts of design.
Bevel on correct side of line
to maintain proper effect.

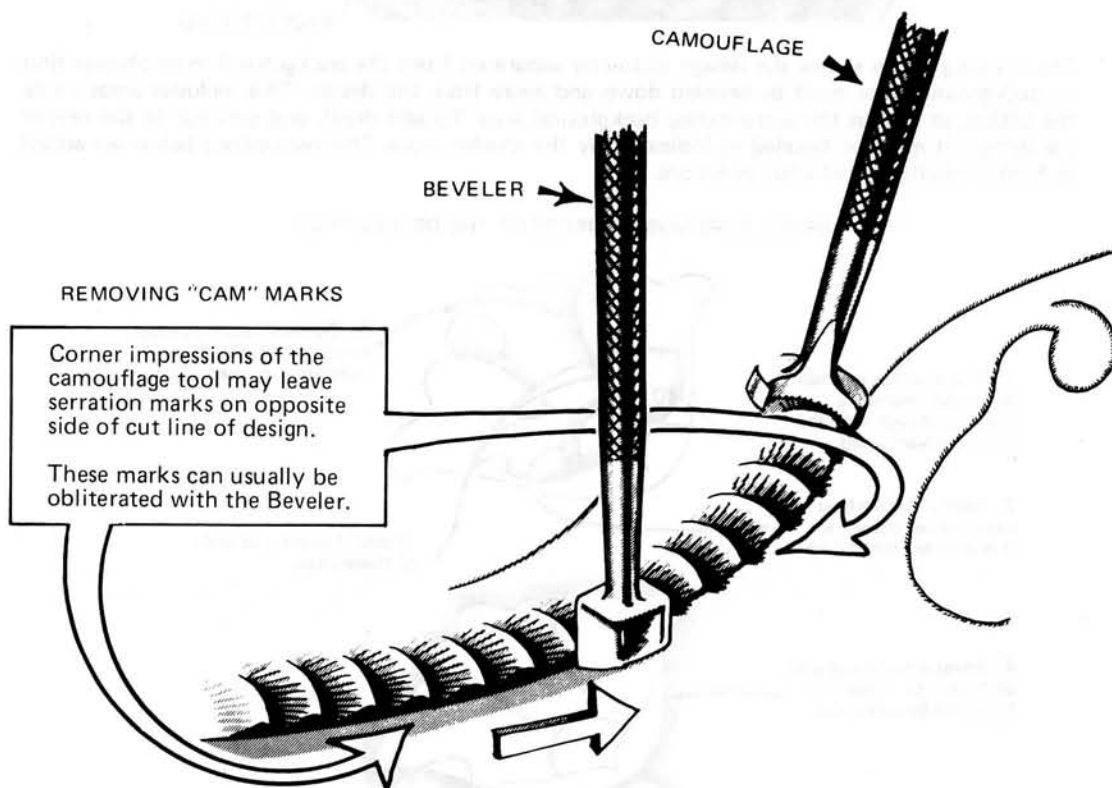
9. Complete beveling of
minor parts of design as
indicated by small arrows.



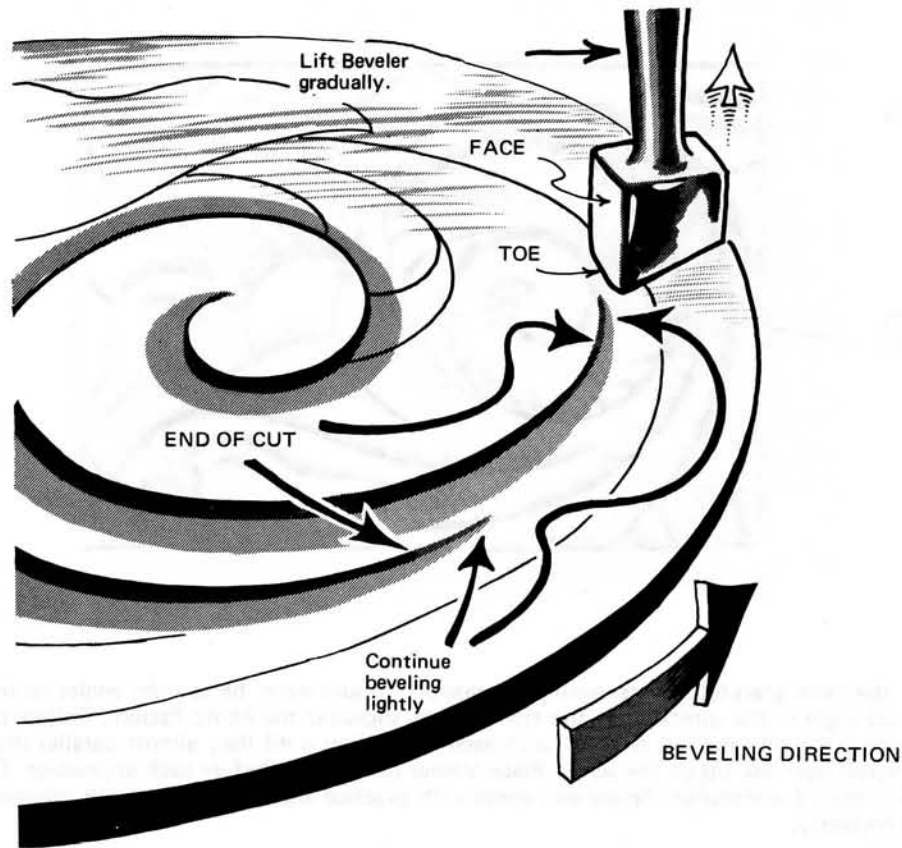
REMOVING "CAM" MARKS

Corner impressions of the
camouflage tool may leave
serration marks on opposite
side of cut line of design.

These marks can usually be
obliterated with the Beveler.



"FADING" THE BEVELING. Beveling should "fade out" on lines of the design that do not join other cuts. On such lines, cutting depth should also "fade out". The knife blade should gradually be withdrawn as the cut is ended. The beveling should taper slightly beyond the cut. Only an unusual design would require an abrupt stop to beveling at the end of a "faded" line. Never begin beveling at the end of a "faded" line. See illustration on the next page.



Begin at center of scroll, beveling lightly. At first quarter turn of scroll, begin beveling deeply. Continue heavy beveling around remainder of scroll. As you near end of the cut, lessen the force of the blows with the Mallet and gradually taper the beveling to lesser depth. Do not stop beveling at the end of the cut, but continue slightly beyond the cut. Gradually lift the Beveler and use lighter taps of the Mallet, thus "fading" the bevel to nothing.

THE VEINER

The VEINER, as the name implies, is used for adding veins to leaves. It may also be used for other decorative and special effects. Veiners are available in several sizes, shapes and curves. It has a medium radius with a scalloped inner edge and serrations on the stamping surface. When the impressions are placed close together, the effect is that of bark or overlapping scales.

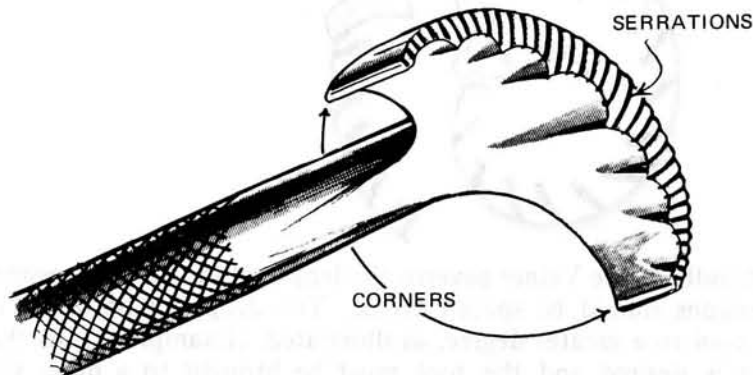
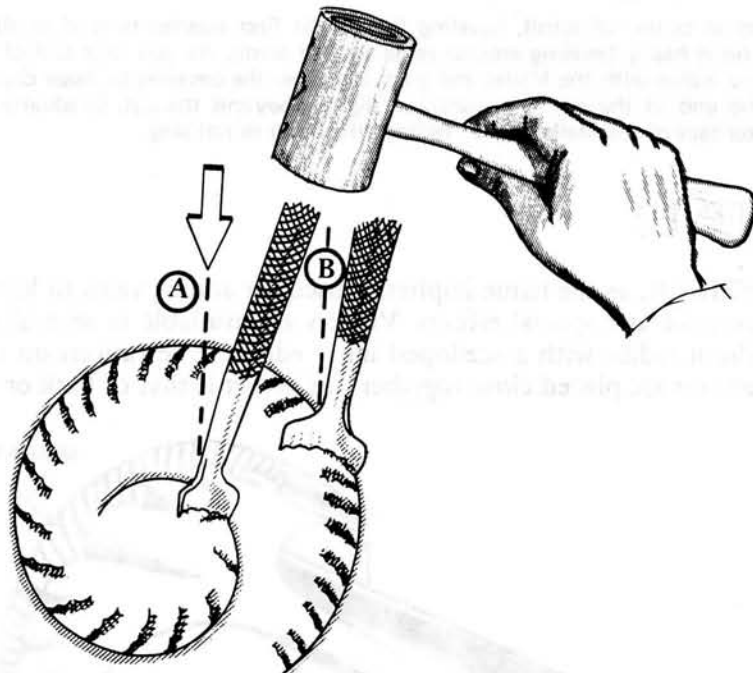


PHOTO
PATTERN

VEINER TOOL
IMPRESSIONS



For the most graceful effects veining impressions should never be at right angles to the line, but should angle in the direction of the stamping, as shown in the Photo Pattern. Follow the curve of the scroll, slightly turning the tool with each impression until they almost parallel the outside of the scroll near the tip of the scroll. Place Veiner deliberately before each impression. Check angle and length of impression. Speed will come with practice and your veining will proceed smoothly and correctly.



The angle of the handle of the Veiner governs the length of the tool impression. When veining the scroll, the impressions should be spaced evenly. The deepest part of the impressions are made by leaning the tool to a greater degree, as illustrated. (Example A). As the scroll widens, a broader impression is desired and the tool must be brought to a more vertical position. (Example B). The impressions of the tool away from the edge of the scroll should "fade out". Full tool impressions are seldom used when veining scrolls and leaves.

THE SEEDER

The SEEDER is used for making seed pods in the flower center. Moisture content of your leather should be almost dry. Hold the tool straight up and down as shown in the picture and strike it firmly to make a clear, clean impression. NOTE: Be careful not to strike the tool too hard because too much force will drive it through the leather. You can learn very quickly just how hard to hit the tool by practicing on a piece of scrap leather.

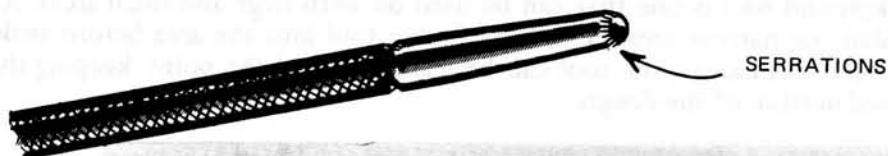
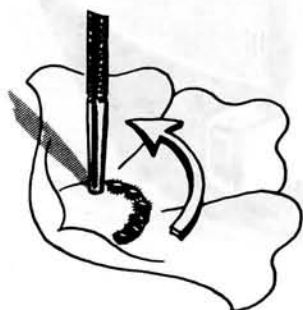


PHOTO
PATTERN

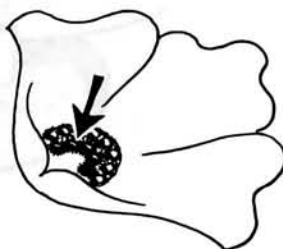


SEEDER TOOL
IMPRESSIONS

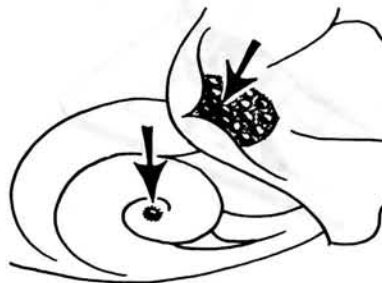
Study this Photo Pattern for correct placing of the centers in a flower pod. Note that none of the Seeder impression overlaps the petal lines.



Begin stamping the outer row of seeds first. Stay within the cut-line and space your impressions as close together as a string of beads. Near end of a row, adjust spacing so that last "seed" does not overlap the flower petal.



Stamp the second row of seeds as shown, stacking them close to the first row and keeping them as even as possible. Do not overlap.

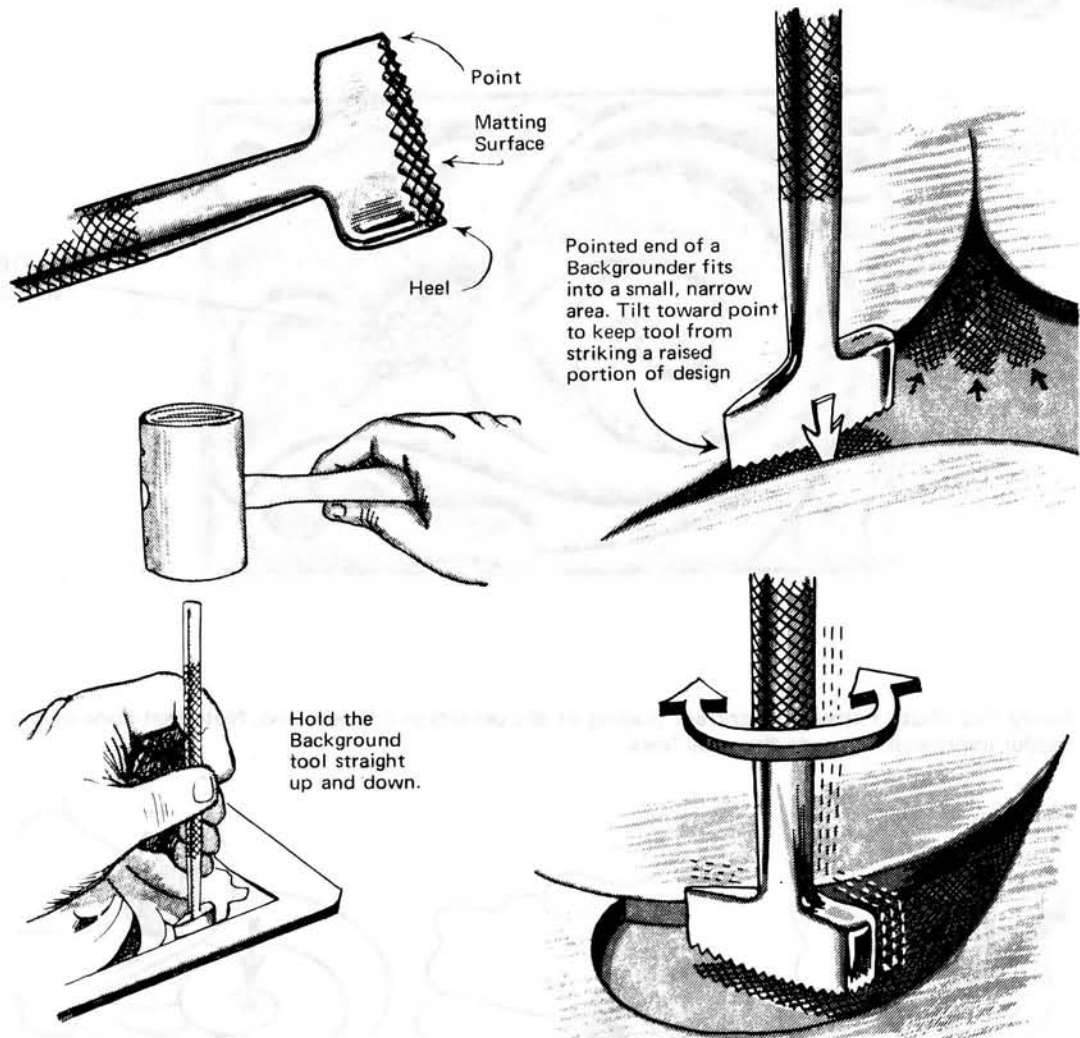


Fill in remaining area. Stamp seeds carefully. Only the serrated edges should touch or overlap. Place a seed in center of scroll.

THE BACKGROUND TOOL

The purpose of the BACKGROUND TOOL is to mat down the background areas within and around the design. Backgrounding is one of the most important steps in leatherwork because it makes your design "stand out" in bold relief. Background tools are made in a number of shapes and sizes.

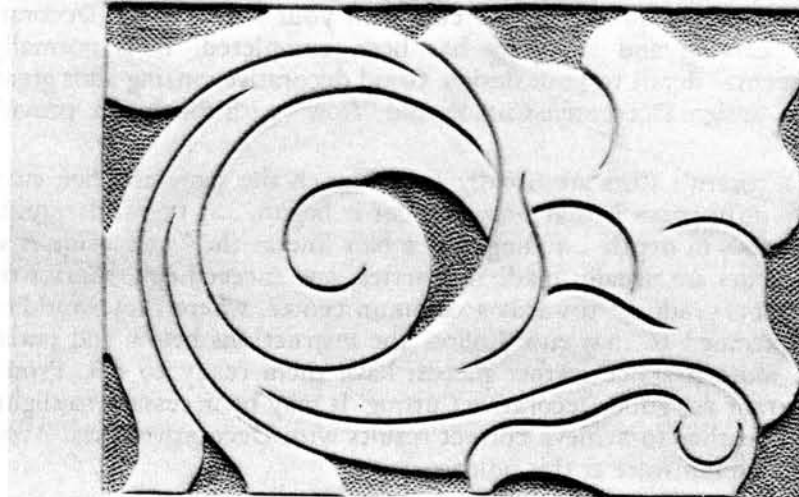
A practical Background tool is one that can be used on both large and small areas. A small pointed end is needed for narrow areas. Carefully fit the tool into the area before striking it with the Mallet. In very small areas, the tool can be leaned toward the point keeping the heel from touching a raised portion of the design.



The Background Tool is used in much the same way as the Beveler in that it should be made to "walk" with each indentation joining the preceding one. Moisture content of your leather should be "just right" (slightly on the dry side). Hold the tool straight up and down as shown and strike it firmly with uniform blows of your mallet. Strike the tool hard enough to drive it just below the cut line of the design. Each section of the background should be uniform in depth; therefore it is best to finish one area at a time. A little practice will help you determine just how hard to strike the tool for various depths.

When the Backgrounder is used to cover large areas, the tool should be "walked". As the tool is "walked", turn the handle in the fingers to prevent a "tool pattern" from forming.

PHOTO PATTERN



This Photo Pattern shows the correct use of the Backgrounder tool. Note the depth of the impressions is even over each separate area. The effect is an over-all impression. "Patterns" are avoided by slightly turning and "walking" the Backgrounder between strokes of the Mallet.

PHOTO PATTERN

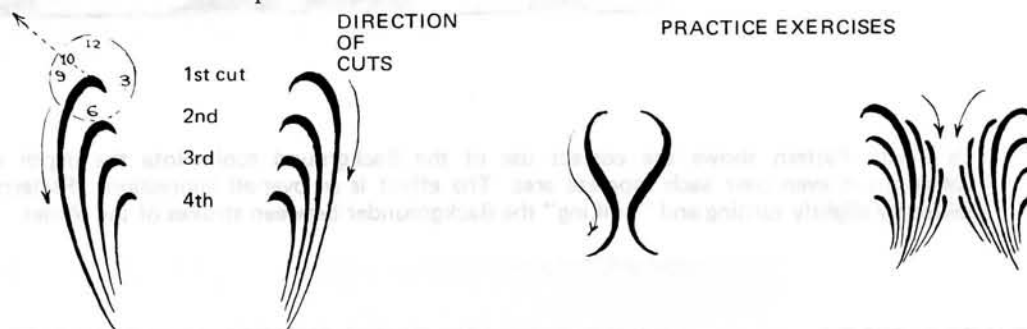


The use of six basic tools are shown on this Photo Pattern. Study the different effects made by each tool. Notice how the impressions of one tool can be used to enhance those of the other tools creating a harmonious design.

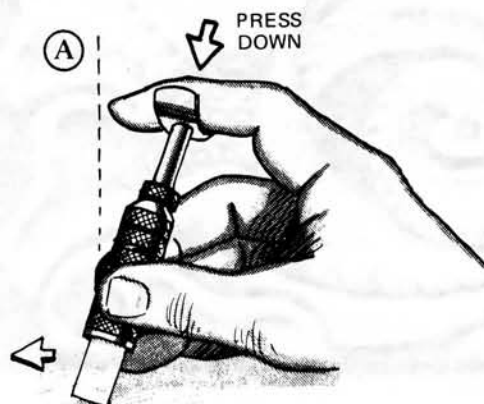
HOW TO MAKE DECORATIVE CUTS

DECORATIVE CUTS. . . as the name implies. . . are cuts you make to decorate or make your design more attractive. Before attempting them on your carved design, familiarize yourself with their nature by practicing the cuts with your swivel knife. Decorative cutting is done after all other carving and stamping has been completed. It is normally the final step in adding ornamental detail to your design. Good decorative cutting adds greatly to the attractiveness of a carved design. Decorative Cuts should "flow" with the design, providing grace and beauty.

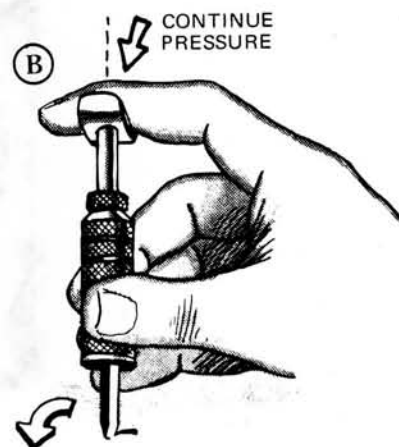
Decorative Cuts are usually begun much the same as when cutting half circles. One of the prime differences is that once the cut is begun. . . it turns sharply, but gracefully, and gradually diminishes in depth. . . fading into a hair line as the knife blade is withdrawn from the leather. These cuts are usually made in a series, one succeeding shorter than the next. The tail end of these cuts graduate towards a common center, where they would eventually meet were they to be continued to that end. Follow the instructions below and practice the exercises presented. Case more practice leather pieces; have them ready to cut. Proper moisture content is very important for good Decorative Cutting. It may be necessary to slightly dampen the grain surface of the leather to achieve correct results with Decorative Cuts. Avoid the tendency of applying too much moisture at this point.



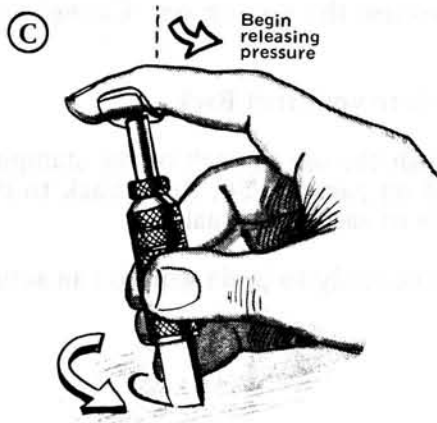
As indicated on the PRACTICE EXERCISES above, make the long cuts first. Practice rights and lefts. . . first for motion and flow to get the feel of decorative cutting. Then, practice for control. . . to make the cuts successively shorter. . . and gracefully graduate towards each other at the ends of each cut.



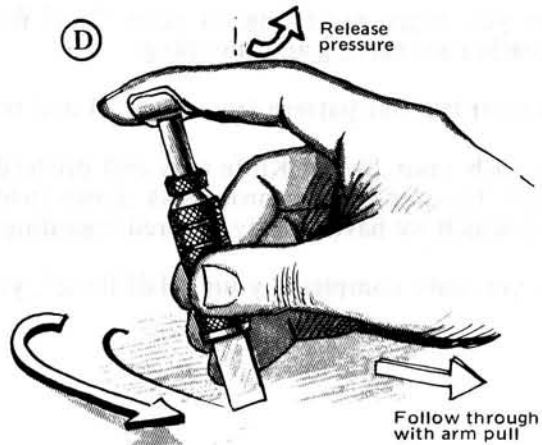
Your hand must be rolled to the right (for right cut) to bring the blade into proper cutting position. Begin with heavy downward pressure to make the cut "pop open". The blade should be pointed at 10 o'clock as illustrated.



Begin the turn immediately, straightening your hand to almost normal position as the blade turns toward your body. Continue heavy downward pressure.

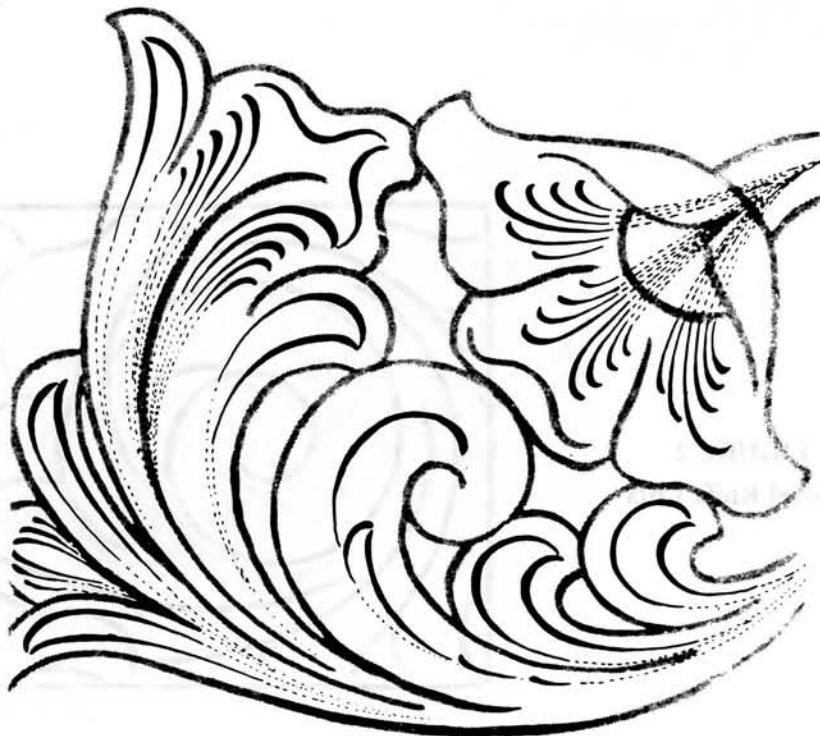


As the cut begins to straighten, pull your hand and arm toward you to steady and control the cut. Gradually diminish the pressure on the yoke.



Continue the cut in one graceful flowing movement, simultaneously lessening the depth of the cut with each motion of progress. Fade the cut to a hair-line and continue the follow-through motion as the blade is lifted from the leather.

A good floral design is composed of graceful, flowing lines. Flower stems leaves, scrolls, etc., should all originate from these flowing lines. Decorative Cutting further enhances or accents these flowing lines. The drawing below is presented to illustrate the correct use of Decorative Cutting. The Decorative Cuts shown have been extended (by dotted lines) to better illustrate their proper flow of direction. You will note that all lines eventually converge into the center of the stems and become a part of the flow of the design. When properly executed, Decorative Cutting becomes an integral part of the design. . .pleasing to the eye and professional in appearance. By thoroughly understanding the purpose of Decorative Cutting. . .your diligent practice should rapidly develop a professional quality. Always keep in mind, while cutting, the flow of design!



You now have a good general knowledge of the way designs and tools function to add beauty and value to leather work. Now let's put the knowledge into practice.

Before you begin practicing on your "Half Back", review the section on "Casing" and preparing leather for carving and stamping.

Trace your transfer pattern from Figure 1 and transfer it to your Half Back.

Begin with your Swivel Knife cuts and proceed through the use of each of the stamping tools. Follow the step-by-step process as shown below and on pages 55-56. Refer back to the information which we have already covered regarding the use of each individual tool.

When you have completed your "Half Back", you will be ready to begin work on an actual project.

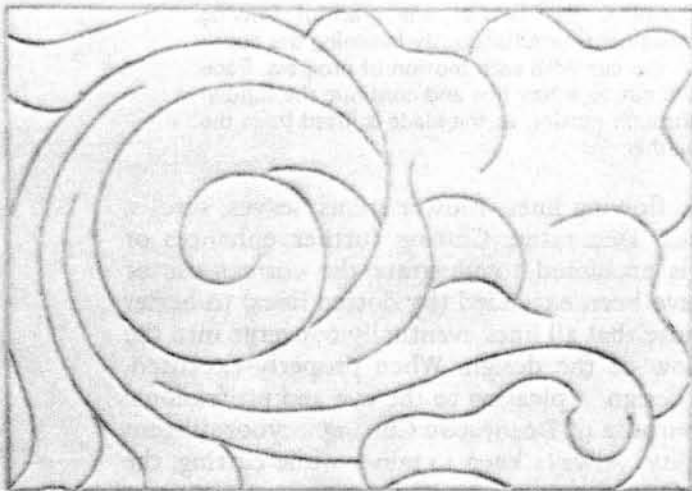


FIGURE 1
Transfer Pattern

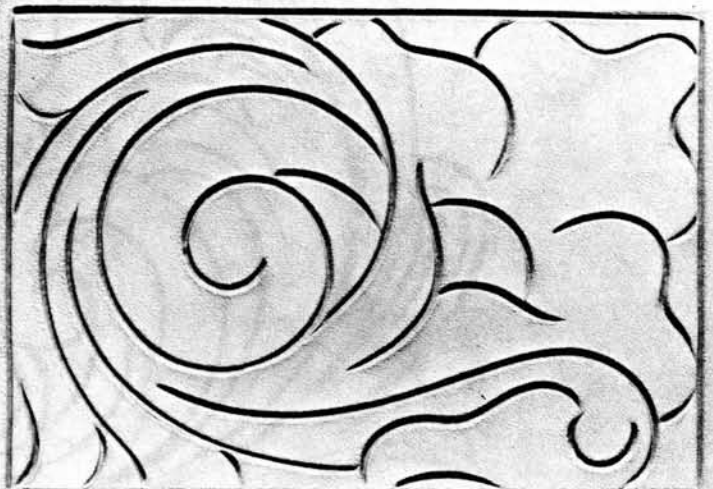


FIGURE 2
Swivel Knife Cuts



FIGURE 3
The Camouflage Tool Impression



FIGURE 4
The Pear Shader Tool Impression



FIGURE 5
The Beveler Tool Impression



FIGURE 6
The Veiner Tool Impression





FIGURE 7
The Seeder Tool Impression

FIGURE 8
The Background Tool Impression



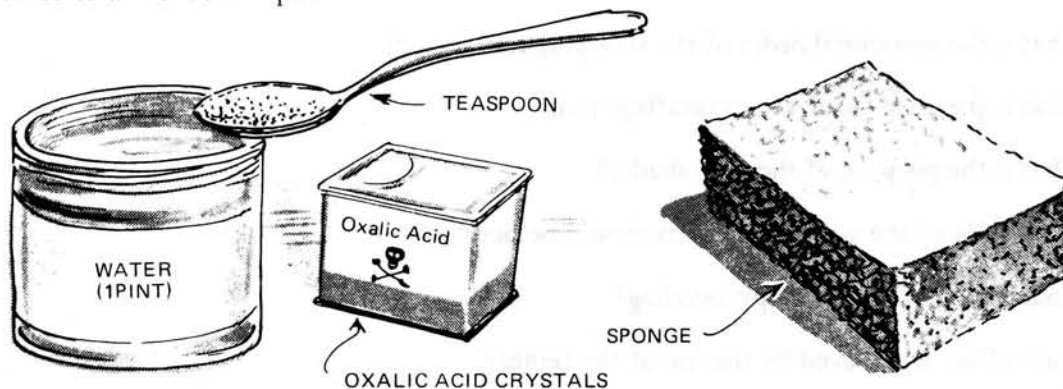
FIGURE 9
Decorative Cuts With Swivel Knife

After all carving and stamping is completed, apply a light coat of Leather Finisher with the sheepwool applicator. Do not saturate the applicator. Wipe off excess on top of container before applying finish to leather surface. Apply finish with a light circular motion over the entire leather grain surface.

A light application of Leather Finisher not only protects your beautiful hand-carved pattern, but adds long-lasting sheen and beauty. NOTE: Be sure to apply finish to projects before assembling them.

Often times, when carving the leather, it becomes stained and smudged with finger marks and other foreign matter. Before dyeing the background, the leather should be cleaned. You can prepare your own cleaner by purchasing a small amount of Oxalic Acid crystals from your leathercraft dealer and preparing the cleaner as shown at right.

Dissolve one teaspoon of Oxalic Acid crystals in a pint of warm water and shake well. When thoroughly dissolved, apply to the carved leather with a damp sponge. Use a light scrubbing motion to clean stubborn spots.



After cleaning thoroughly, wash sponge and bathe grained surface with clean water to remove surface accumulation of cleaning solution.

CAUTION: Use only recommended formulations. Stronger solutions have a tendency to burn the grained surface and give leather a coarse, dead texture.

GETTING TO KNOW YOUR OTHER LEATHER WORKING TOOLS : REVIEW TOPICS

1. Why should a metal-faced mallet or hammer never be used on a stamping tool?
2. What are the six (6) basic types of stamping tools?
3. What is the sequential order of the stamping tool in use?
4. What is the purpose of the camouflage tool?
5. What is the purpose of the pear shader?
6. Which side of the swivel knife cuts should be beveled?
7. What is the cause of choppy beveling?
8. What effect is achieved by the use of the veiner?
9. What is the danger in striking the seeder too hard?
10. What is the purpose of the background tool?
11. Why is it often necessary to add moisture to the grained surface of the leather before making the decorative cuts?

LEATHER FABRICATION

Making articles with leather can be done by two methods. One way is to use the pre-fabricated kits available at most leather stores. A kit with all accessories and pre-cut, pre-punched parts with instructions for the particular project is an excellent introduction to leather work. In many circumstances when time, space or facilities are limited, these pre-fabricated kits are ideal.

Another method, requiring more initiative and planning is to design your own article. By this method the principles of design and composition are put to practical use, enabling the student to more thoroughly understand the application of principles. After the design is accurately rendered on paper, including all measurements, position of hardware and pattern for stamping or carving, it can be transferred to a piece of fiberboard or cardboard to make a cutting pattern, called a "template". This cutting pattern template can be used many times.

When the emphasis is on developing technique in working with leather, a wide assortment of pattern books and templates are available at most leather stores. These patterns may be adjusted to the needs of the various projects by the student and serve to speed the designing process.

The selection of the skin for cutting your own design is important. For students, a skin of 2½ oz. to 3½ oz. calf or kip is an easily handled weight, with a good carving surface. After a little practice, other leathers with distinctive characteristics may be preferred.

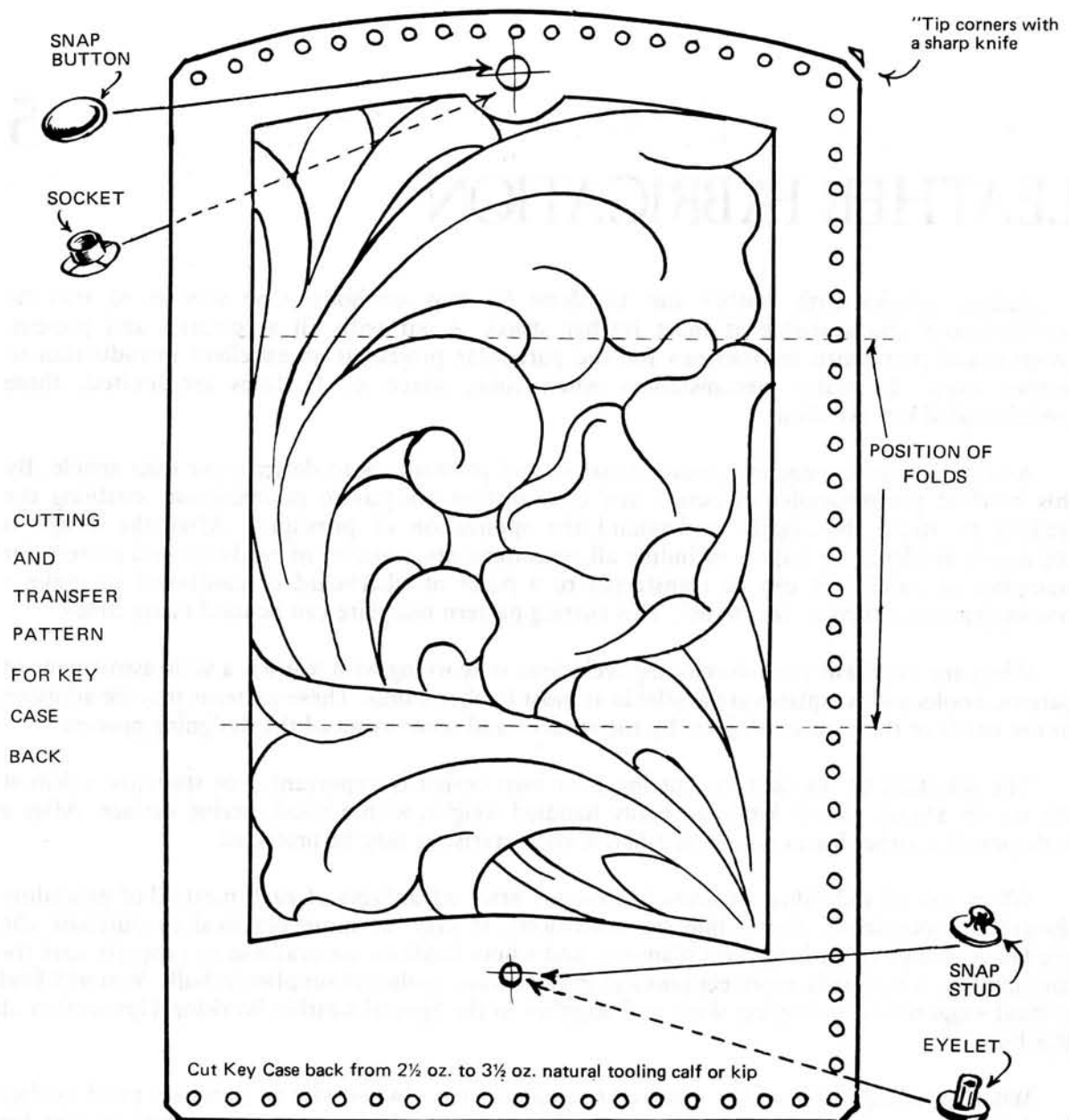
When cost of individual projects is a factor, price advantages of each method of procedure should be considered. Depending on conditions, it may be more practical to purchase the pre-fabricated kits. For long-term planning, and where facilities are available to properly care for the supplies, it is usually more economical to buy skins, tools and supplies in bulk. You will find helpful suggestions on buying skins and supplies in the Special Leather Working Tips section of this book.

When selecting supplies for your own projects, it is always wise to purchase good quality hardware. . .snaps, key plates and tools, eyelets, handbag locks, etc. Leather articles last for

years of constant use, so only the best metal hardware that also retains its beauty should be used.

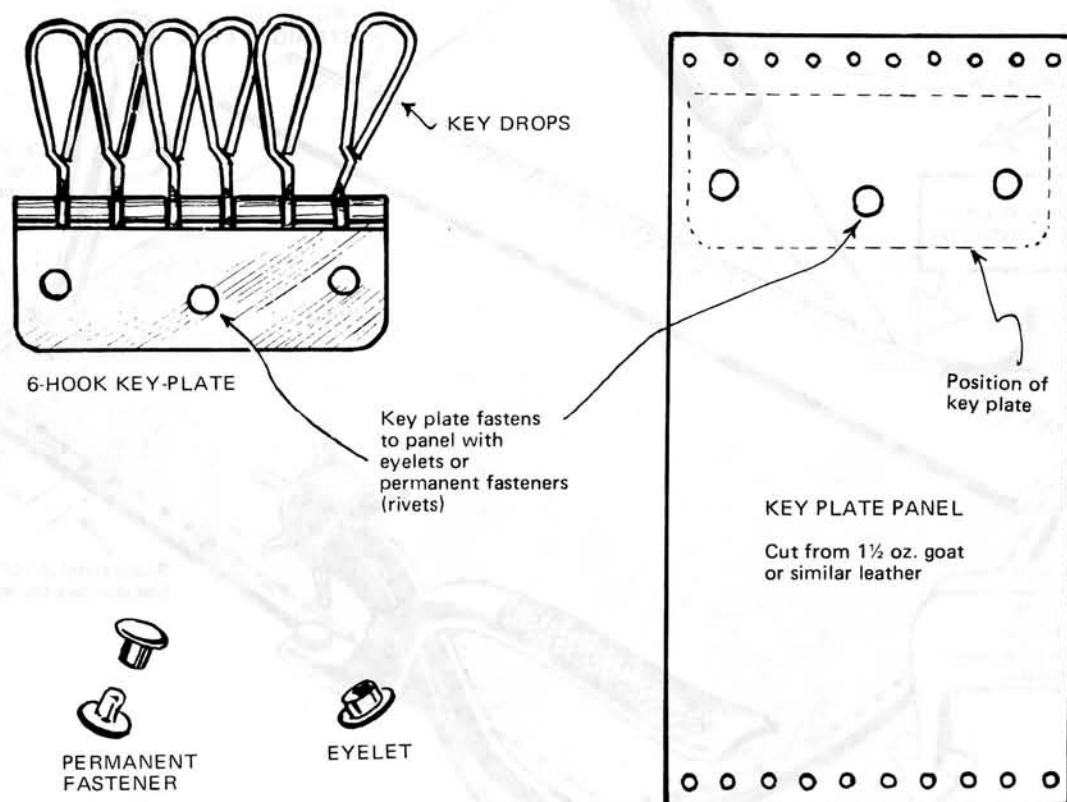
Before beginning work on the leather project, a composition layout should be developed. The exact measurements of the article, the position of holes for hardware, crease or fold lines, and holes for stitching the parts (lacing holes) should be precisely drawn on a piece of paper. The position of any secondary part, such as lining, key plate panel, pocket or zipper should be carefully measured and indicated on the pattern. Any place the leather is to fold is indicated by "fold lines".

The design of any decorative work of carving or stamping should also be done on paper. Plan the design to conform with the shape and shape of the article. For instance, the pattern



for a key case should look complete in each panel when the case is folded as well as when the case is open. After design is established the basic outline should be traced onto transfer paper or film for transfer to the leather.

A schedule of procedure should be planned. This will assure proper step by step procedure from start to finish of the project. The illustration below coupled with the key case back layout shown on the preceding page is a comprehensive layout for a key case. From such a layout, the leather worker makes his cutting pattern for the various parts as well as the outline for the carving and stamping design.



CUTTING THE LEATHER

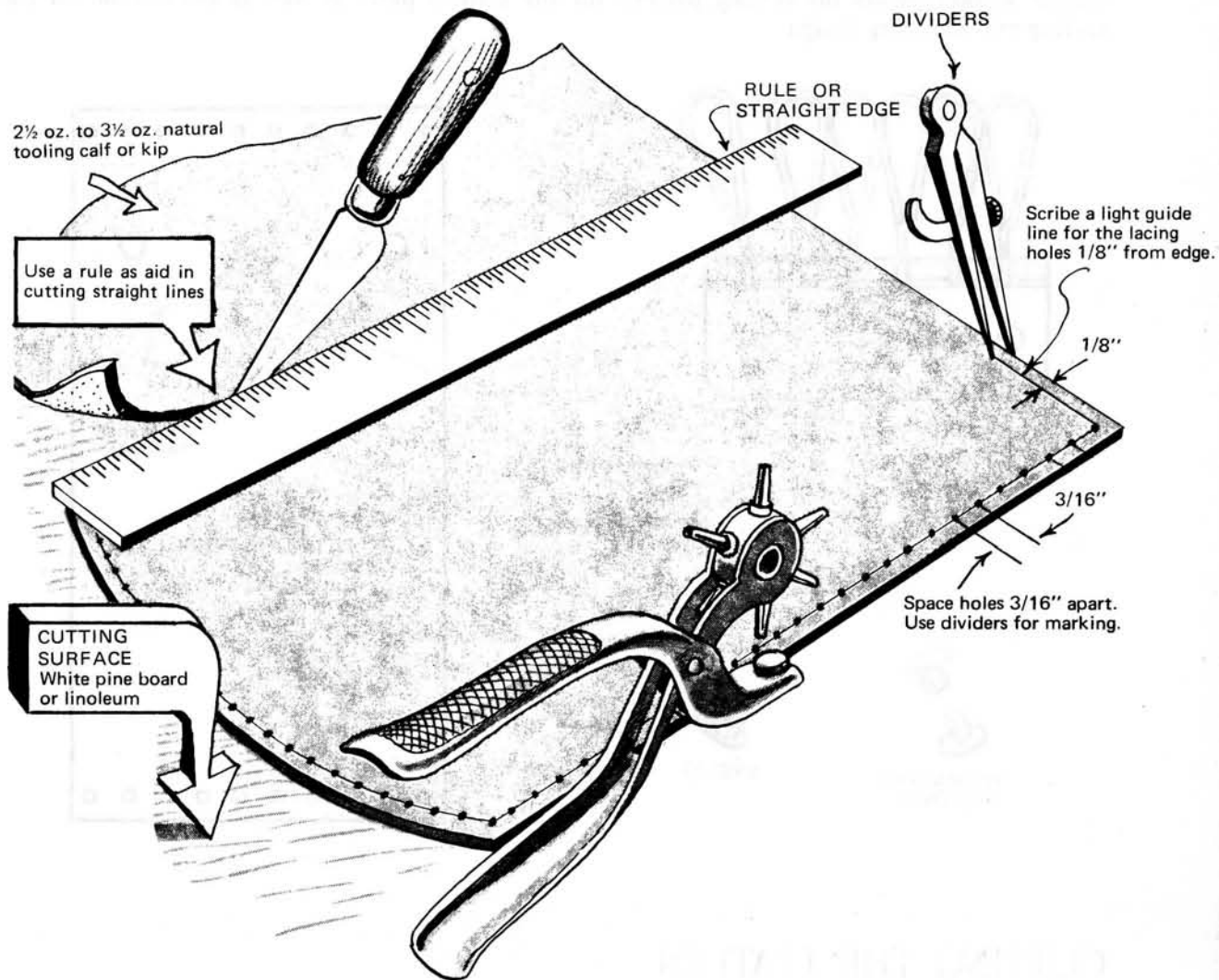
After the pattern has been accurately drawn, make a cutting pattern by transferring the outline to fiberboard or cardboard. Cut the edge very smoothly. Make small notches at the edge of the template to indicate fold lines. Label each part.

Lay the leather on a white pine board or piece of linoleum. Position the template on the leather, taking advantage of the shape and texture of the skin. Learning to cut the skin without waste is an important step in controlling the cost of the project. Trace around the template with a stylus. Never use pencil or pen on leather.

Use a sharp knife against the straight edge of a rule for cutting straight edges. On curved edges, follow the pattern line carefully with knife or leather cutting shears.

The illustration below shows the entire cutting and punching process. See the section on thonging chisels for detailed instructions on punching holes.

EXAMPLE: KEY CASE

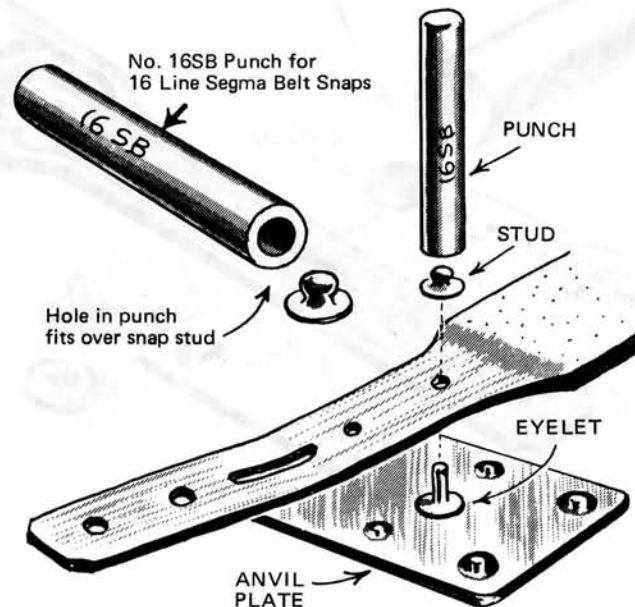
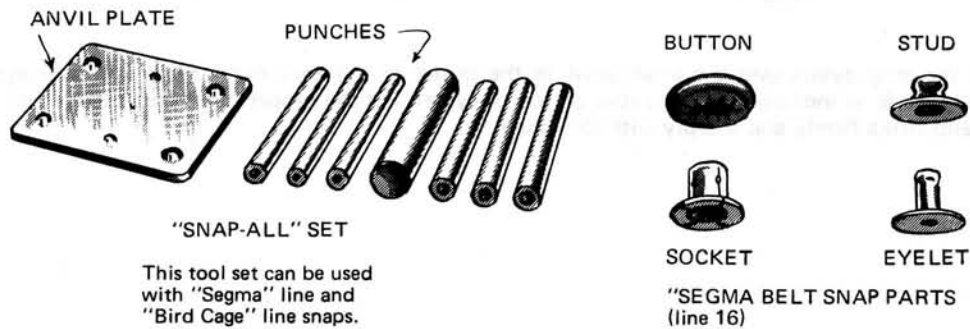
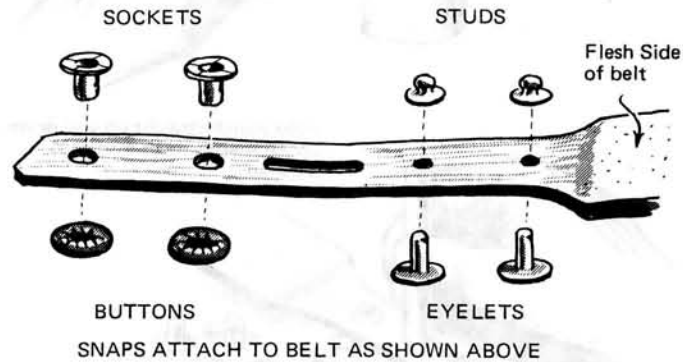


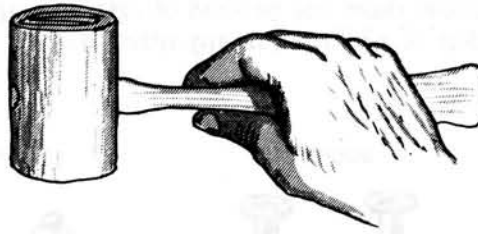
SETTING SNAP FASTENERS

A wide assortment of snap fasteners and tools for installing them is available from leather dealers. The function of the snap fastener determines the type and size for a specific article.

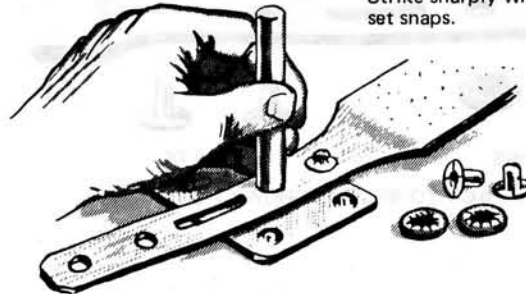
A snap setting tool which will accommodate various snap fasteners is preferable to one which sets only one or a limited number. It is less expensive to buy one multi-purpose tool than several tools of limited capacity.

The illustrations below show the process of setting snaps on a belt. The same procedure is used on key cases, pocket of a billfold, or any other article.

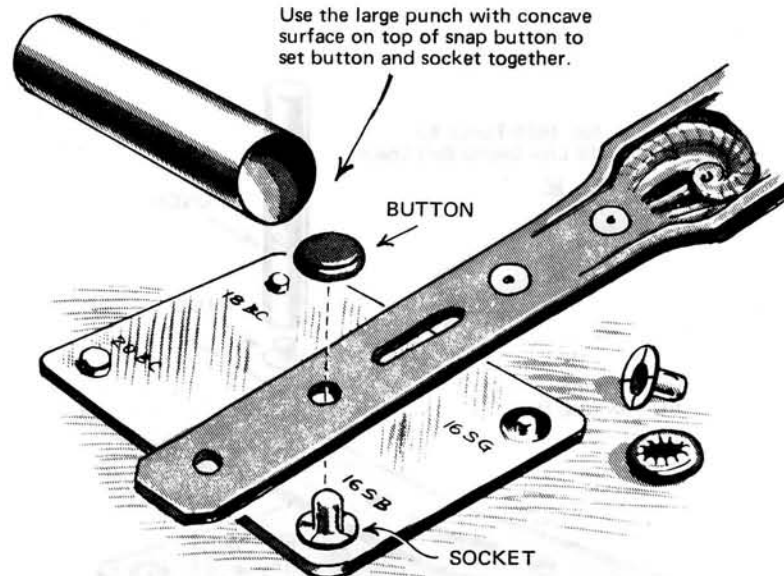




Hold punch straight up and down.
Strike sharply with mallet to
set snaps.



Place the snap eyelet over the small anvil, in the center of the anvil plate. Place belt over eyelet (through hole as indicated) and set stud on top of eyelet. Set the proper numbered punch over the stud and strike firmly and sharply with the mallet.



Place socket over matching numbered anvil plate (see chart on back of Snap-All tool set). Push belt over socket; set button on top of socket and set concave punch over button. Strike firmly with mallet to set the parts.

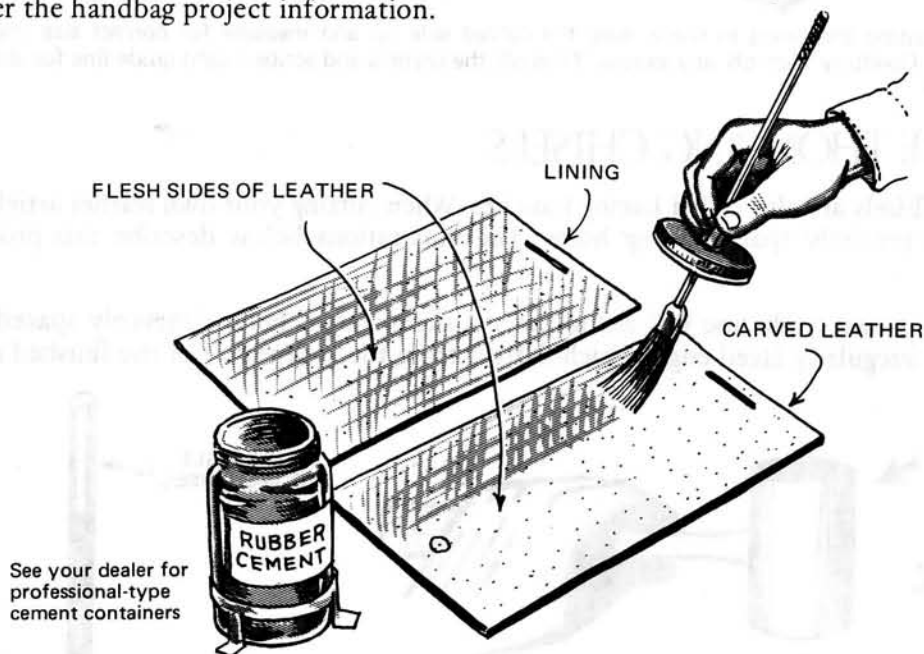
INSTALLING LEATHER LININGS

Proper preparation and installation of linings is vitally important to the appearance and utility of leather projects.

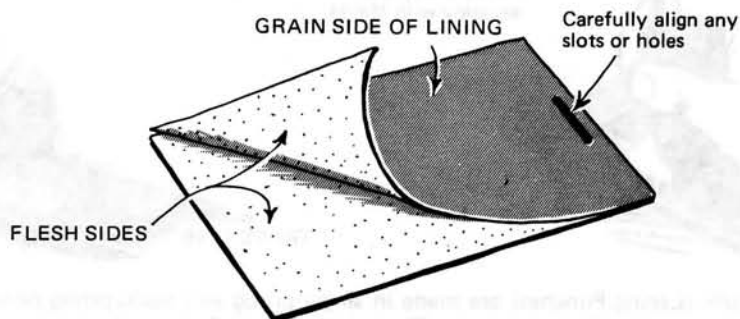
After the exterior pieces of leather have been stamped or carved with the desired design, install the hardware such as bag clasps or snap fasteners if they are part of the article. The underparts of the hardware will then be covered with the lining.

For best results, lining material parts should be cut slightly larger than the exterior parts of the article. During the carving and stamping of the design, the exterior may expand slightly. If the lining material is slightly over-size, it may be trimmed for a precise fit on the exterior part.

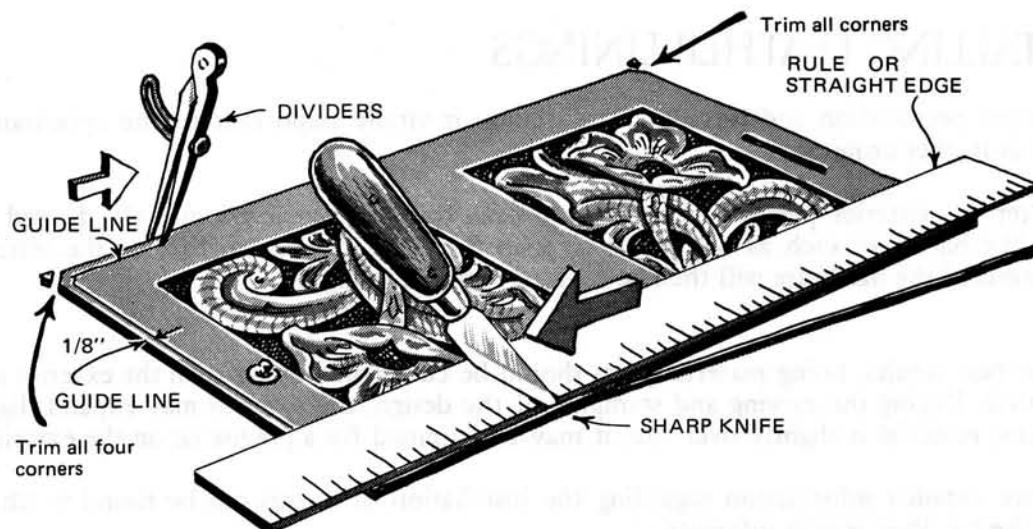
More detailed information regarding the installation of linings can be found in Chapter 8 under the handbag project information.



Place the carved leather and the lining with the flesh sides up. Apply a thin coating of rubber cement to each.



Allow a few seconds for the cement to dry, then carefully align the slots or holes and one edge. If the lining is crooked, pull loose and restick in proper position. The main purpose of cementing the leathers is to hold them together until they are laced.

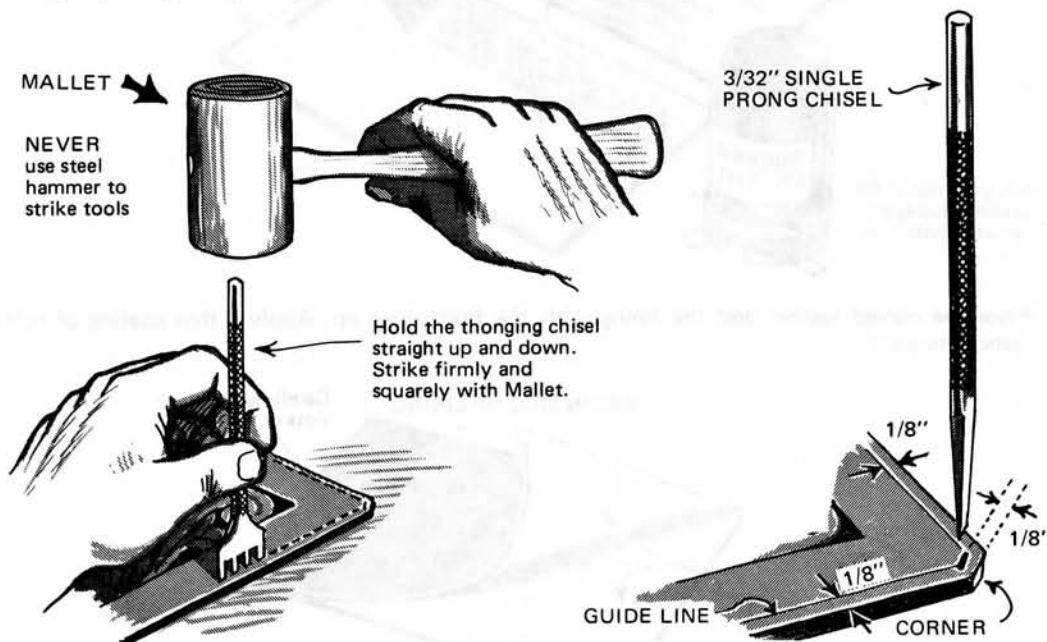


After cementing the lining in place, turn the carved side up and measure for correct size and squareness. Carefully trim off any excess. Trim off the corners and scribe a light guide line for the lacing holes.

USING THE THONGING CHISELS

Thonging Chisels are also called Lacing Punches. When cutting your own leather articles you need to punch precisely spaced lacing holes. The illustrations below describe this process in detail.

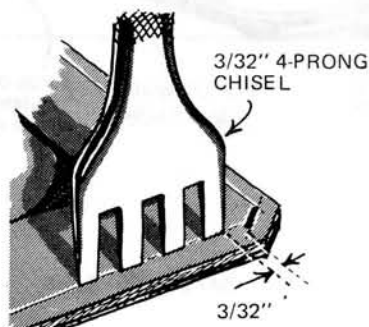
A carefully drawn guide line will aid in precise alignment of holes. Unevenly spaced holes cause unsightly irregularly laced edges which detract from the appearance of the finished article.



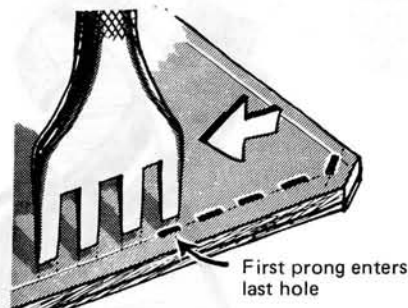
Thonging Chisels (Lacing Punches) are made in single prong and multi-prong punches. The single prong is used for corner slits, curves, etc. The multi-prong is faster and more accurate for straight lines. The holes are first punched through the carved back and lining, before the inside parts are assembled. This procedure insures accurate spacing of holes and easier, more uniform punching through the remainder of the project. Begin by punching all corner holes.

Several different styles and sizes of thonging chisels are available from your leather dealer. Many projects are greatly enhanced by the use of an angle thonging chisel. This type of chisel provides a lacing hole punched on a 45 degree bias with the edge of the leather.

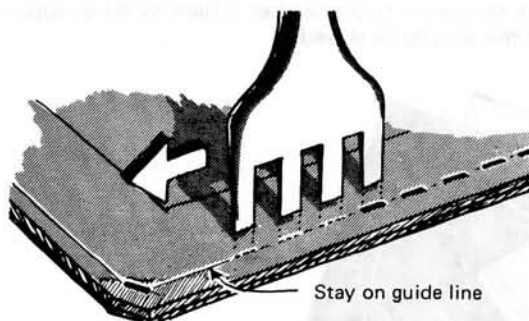
For large bulky articles where considerable holding strength is required of the lacing, 1/8" lacing and thonging chisels are available.



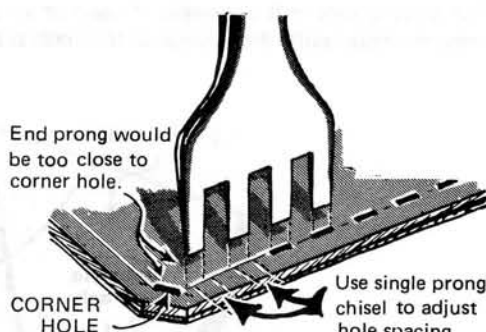
After punching the corner holes, begin next holes with the multi-prong chisel. Space the first hole (from corner) same width as the punch blade (3/32").



To properly align succeeding holes, place first prong in last hole; punch again.



Continue punching to the next corner.

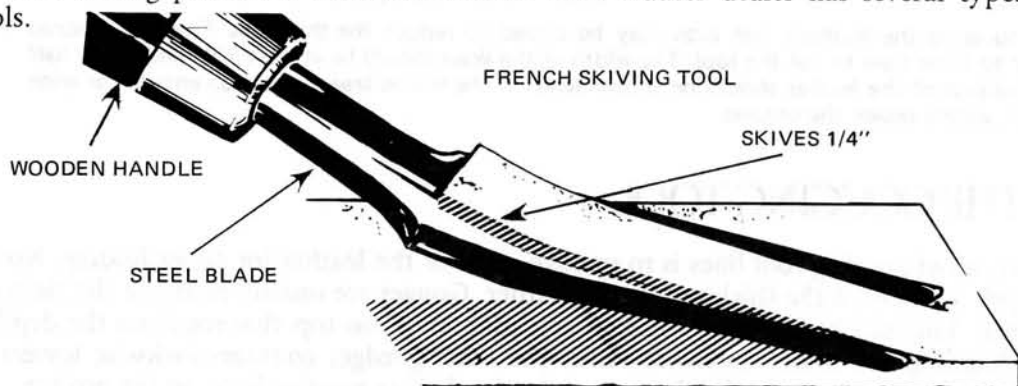


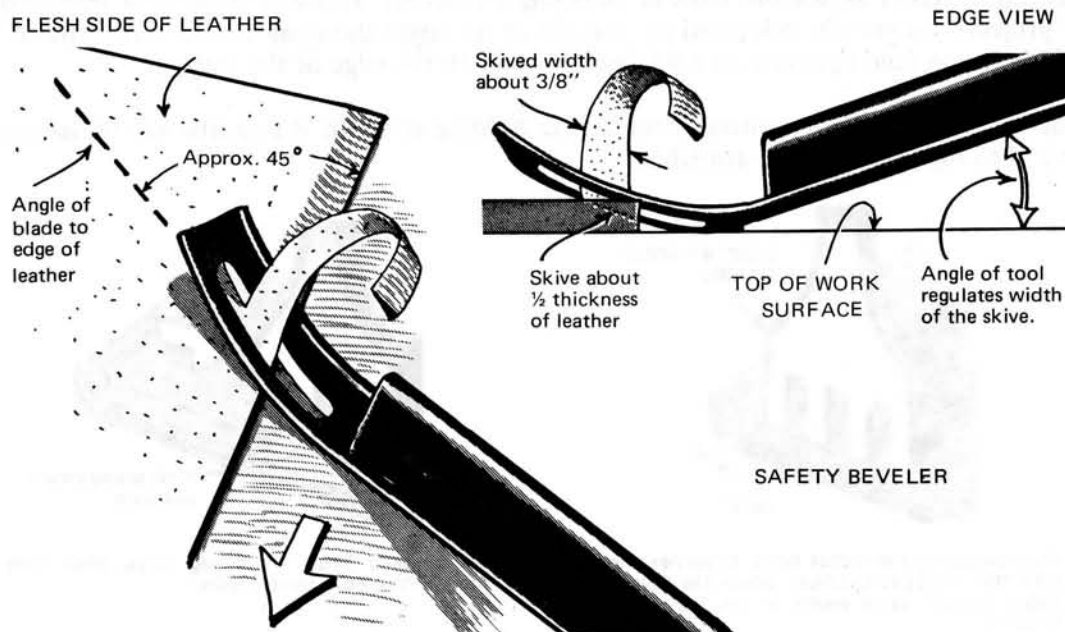
If holes do not come evenly spaced at next corner, adjust the space by using the single prong chisel.

USING THE SKIVING TOOLS

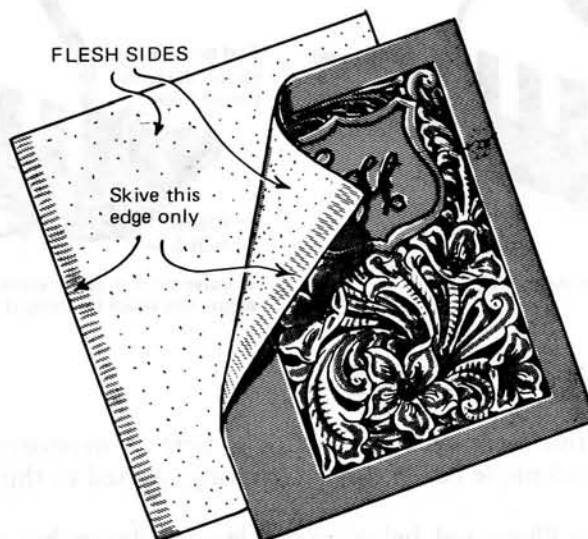
A reduction of the thickness of the edge of a part is necessary in some steps of the assembling procedure. A technique called skiving (shaving) is used to thin edges.

The skiving process is illustrated below. Your leather dealer has several types of skiving tools.





The skiving tool will cut easier if used at an angle as shown. If the leather is hard to skive, apply some moisture with the sponge to the flesh side of the area to be skived.

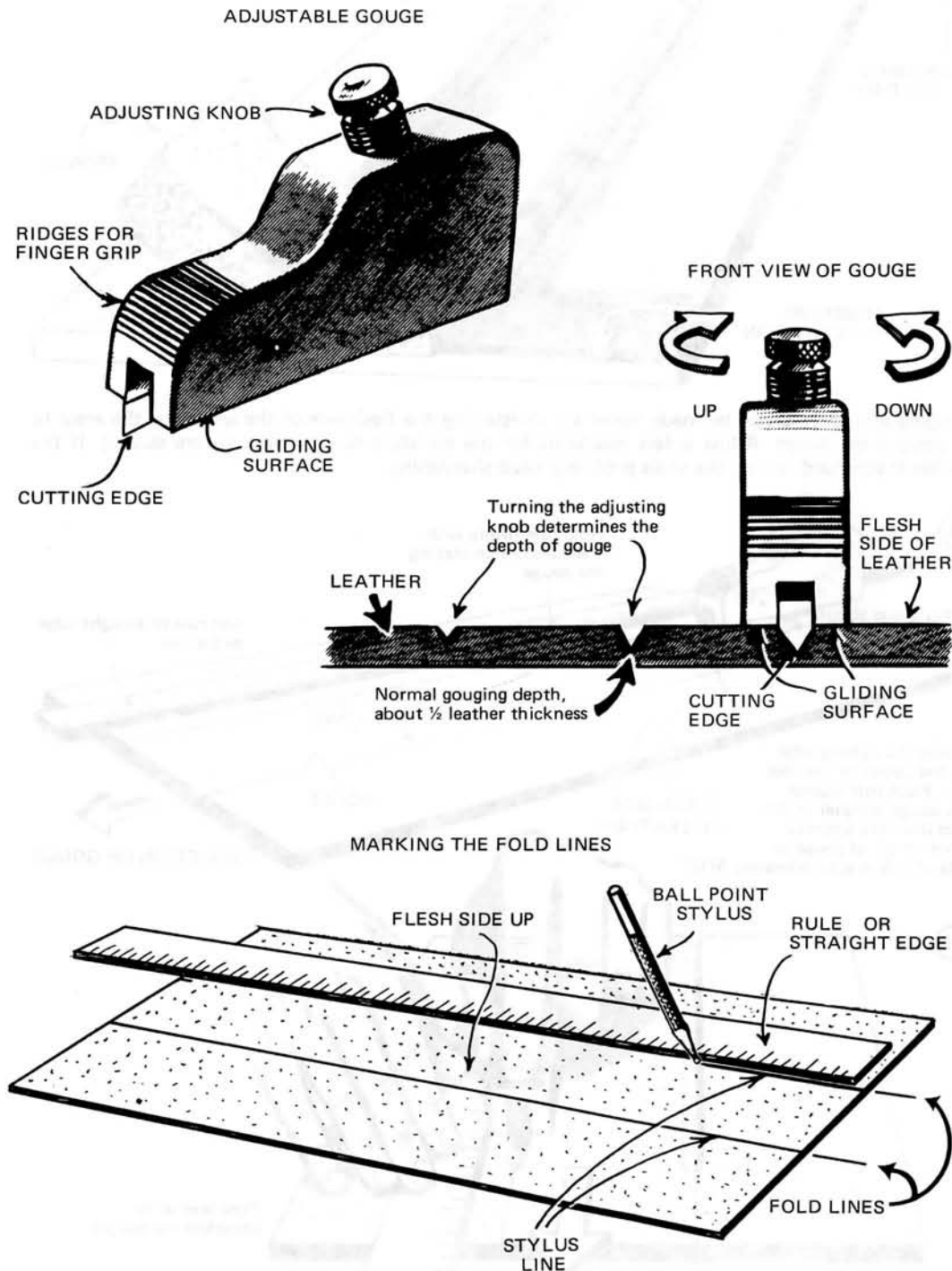


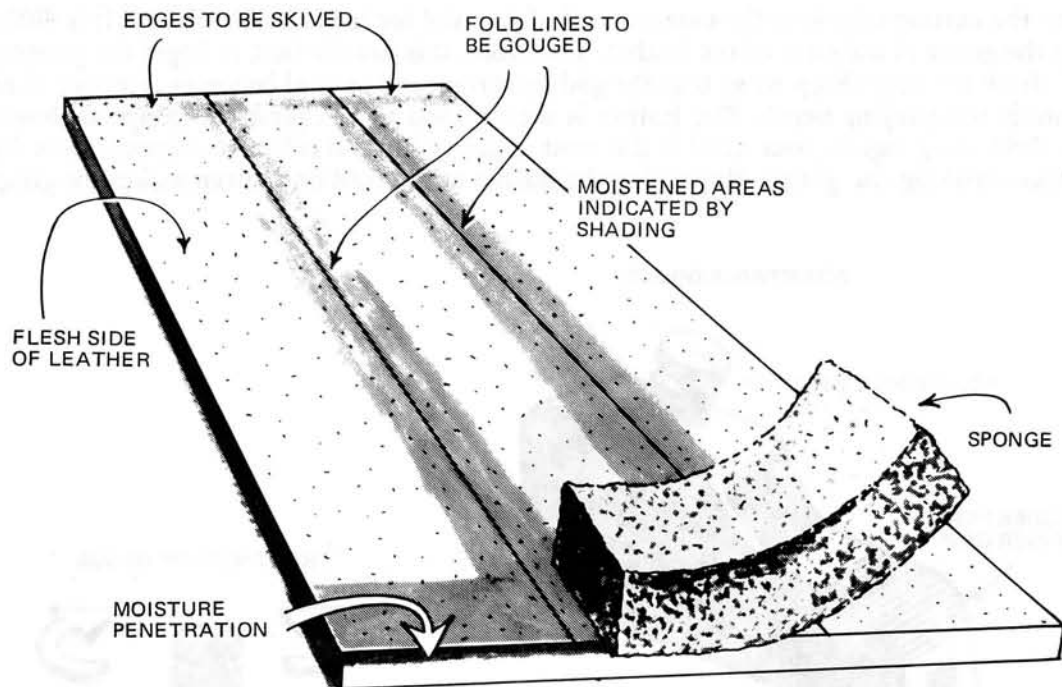
After squaring the leathers, one edge may be skived to reduce the thickness. Practice on scrap leather to learn how to use the tool. The width of the skive should be at least $\frac{3}{8}$ " and about half the thickness of the leather should be skived away. If the skived area is not deep enough, or wide enough, simply repeat the process.

USING THE GOUGING TOOL

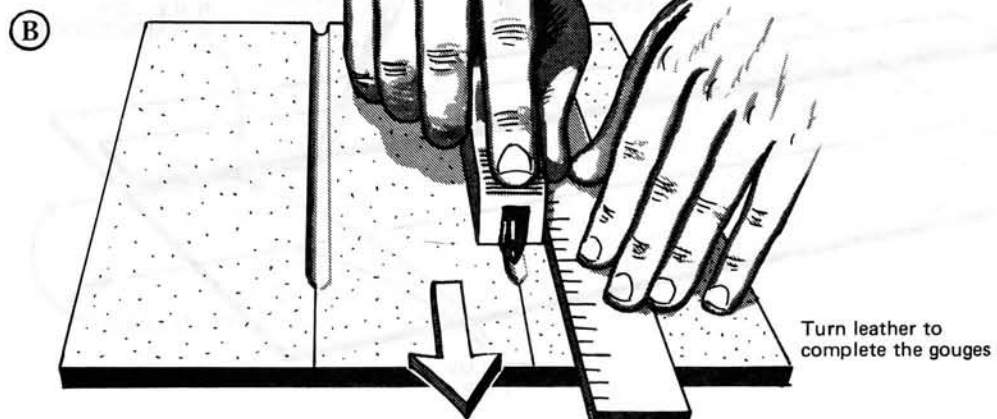
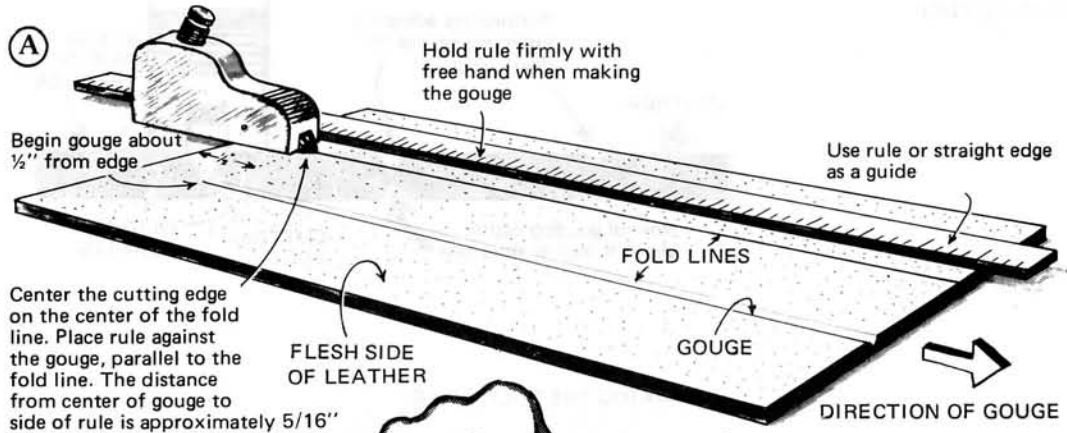
The purpose of gouging fold lines is to remove some of the leather for easier folding. Normal gouging depth is about $\frac{1}{2}$ the thickness of the leather. Gouges are usually made on the flesh side of the leather. The Adjustable Gouge has an adjusting knob on top that regulates the depth of the gouge. Turning the knob clockwise raises the cutting edge; counter-clockwise lowers the cutting edge. Adjust the gouging depth on scrap leather before gouging lines on the project.

Since the cutting edge is at the extreme end of the tool for maximum visibility, it is difficult to begin the gouge at the edge of the leather. Therefore, it is usually best to begin the gouging at least $\frac{1}{2}$ " from the edge (Step A) so that the gliding surface of the tool becomes effective at once and controls the gouging depth. The leather is then turned to complete the gouge as shown in Step B. Hold the gouge in your hand in the most comfortable and effective manner; press down firmly when making the gouge. Moistening the leather at the fold lines often makes the gouging easier.





Gouging and skiving can be made easier by moistening the flesh side of the leather at the areas to be gouged or skived. Allow a few moments for the moisture to penetrate before skiving. If the leather is still hard to cut, the tools probably need sharpening.



LEATHER FABRICATION REVIEW TOPICS

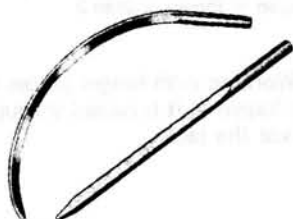
1. How is proper spacing of lacing holes determined?
2. At what distance from the edge of a project should the lacing holes be punched?
3. What are the basic snap parts?
Which of the parts are set together?
4. To which side of the leather is the cement applied?
5. What is the purpose of the single prong thonging chisel?
6. What is the purpose of the multi-prong thonging chisel?
7. Why is it necessary in some cases to skive the edge of leather?
8. What is the normal gouging depth?
9. Why should fold lines be gouged?

LEATHER TACKLING REPAIRS

1. To repair a small hole in leather, use a leather repair kit.
2. To repair a large hole in leather, use a leather repair kit and a leather patch.
3. To repair a scratch in leather, use a leather repair kit.
4. To repair a stain in leather, use a leather repair kit.
5. To repair a tear in leather, use a leather repair kit.
6. To repair a crack in leather, use a leather repair kit.
7. To repair a hole in leather, use a leather repair kit.
8. To repair a hole in leather, use a leather repair kit.
9. To repair a hole in leather, use a leather repair kit.
10. To repair a hole in leather, use a leather repair kit.

TECHNIQUES OF STRUCTURAL ASSEMBLY

Lacing puts the finishing touch to handmade leather articles. How good the finished product looks depends very much on the lacing. Thus, how you lace, your technique and the finished look, has a great deal of importance in the appearance of the finished product. With the following instructions and illustrations, plus a little practice, you will soon be doing a professional job of lacing.



LIFE EYE
NEEDLES



2 PRONG
NEEDLE



HOOK & EYE
NEEDLE



LACING PONY



LACING FID

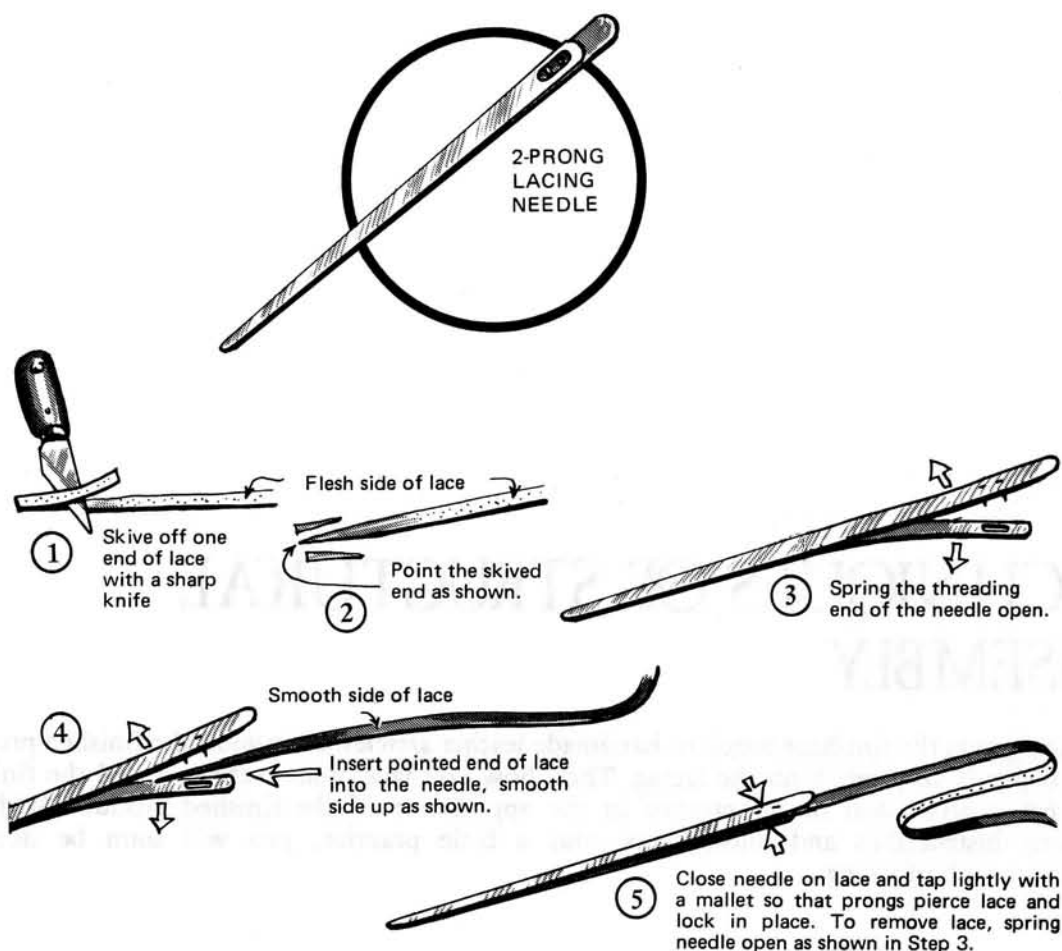


MODELING TOOL



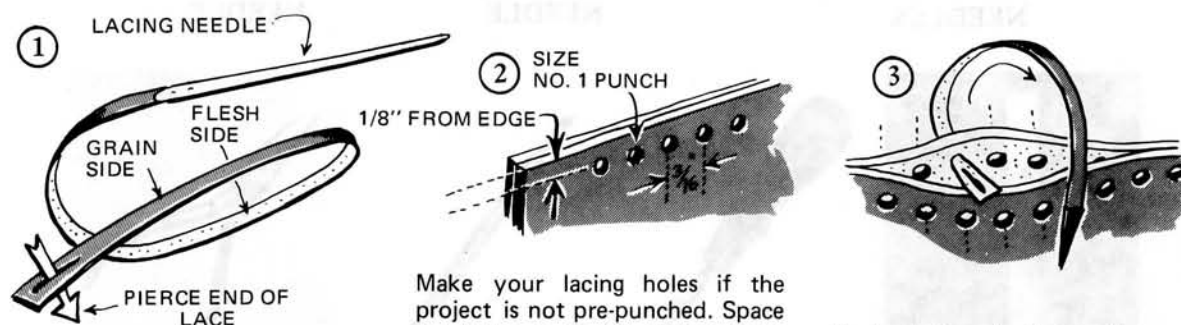
PLIERS

THREADING THE NEEDLE



NOTE: You should load 2 yds. of lacing in lacing needle at a time. Working with longer pieces of lacing will be difficult and can cause the lacing to wear and become frayed as it is pulled through the lacing holes. When lacing, the front side of the project should face the lacer.

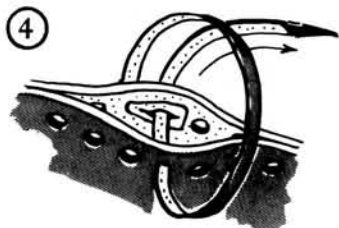
THE WHIP STITCH



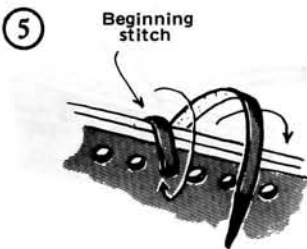
Thread the needle and then pierce the opposite end of the lace with a sharp knife leaving a slit of 1/8".

Make your lacing holes if the project is not pre-punched. Space the holes as shown above about 1/8" from the edge and approximately 3/16" apart. Be sure they are spaced equally.

Begin lacing starting in between the two layers of leather. Leave about 1/4" at the end where you slit the lace.

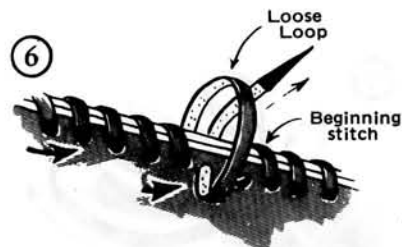


Push needle through the second hole, then thread it through the slit in the end of the lace and through the opposite hole, as shown.

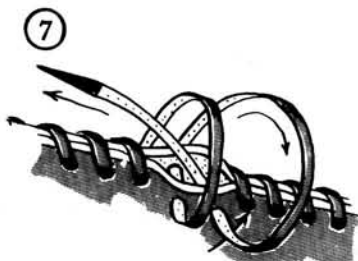


Pull stitch up tight.

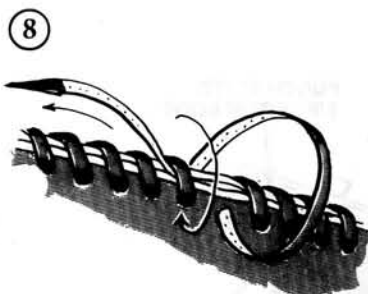
Continue lacing, tightening the lace as you go.



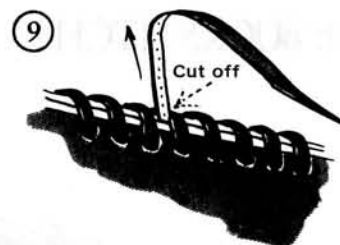
Lace around the project leaving a loose loop in the 2nd hole from the beginning stitch. There will be one unlaced hole between your very first and your last stitch, as shown.



Spread the 2 leather layers and lace through the last hole, up between the leathers and through the 1st loose loop, as shown.

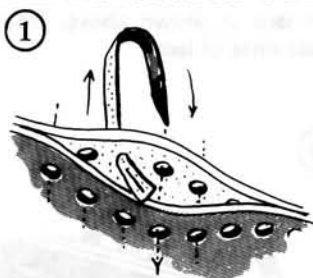


Pull the first loop tight, over end of lace, as shown.

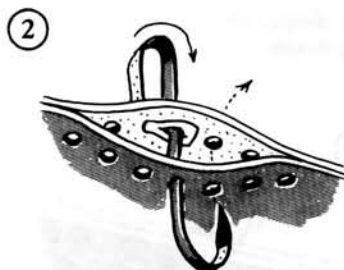


Pull end of lace tight to take slack out of last loop. Cut off the end of the lace with a sharp knife and tap all lacing flat with smooth-faced mallet.

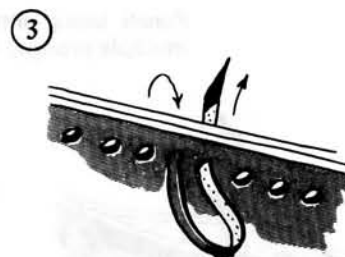
THE RUNNING STITCH



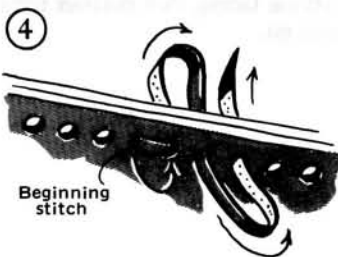
Begin lacing just as you did for the Whip stitch.



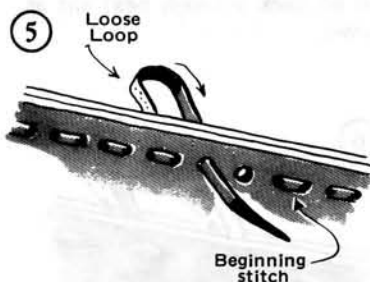
Push needle through the next hole from the back, through the slit and out through the opposite hole in front, as shown.



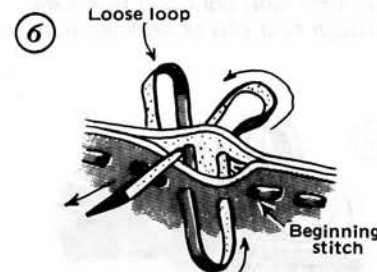
Pull stitch up tight to lock the lace. Continue lacing the rest of the project.



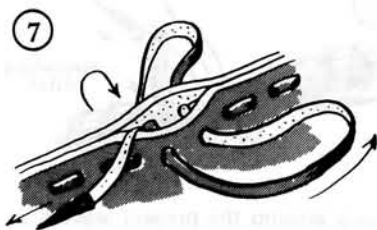
Pull the beginning stitch up tight and continue lacing, pulling the stitches tight as you go.



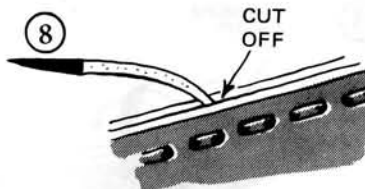
Lace to the last hole and leave a loose loop in the second to the last hole.



Push needle through last hole. Spread leathers; push needle through next to last hole bringing needle up between leathers.

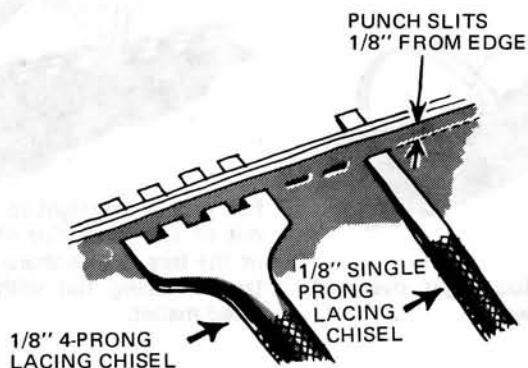


Pull the loose loop tight and continue pulling all the slack out of the lace.

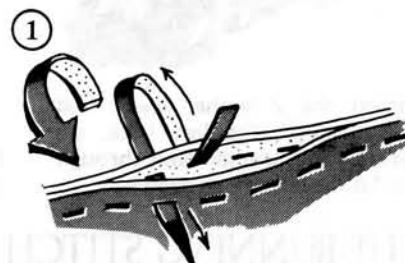


Pull all stitching up tight and pull end of lace tight. Cut off the end of the lace close to the leather and tap all lacing flat with a smooth mallet.

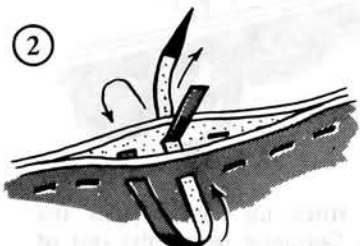
THE BUCKSTITCH



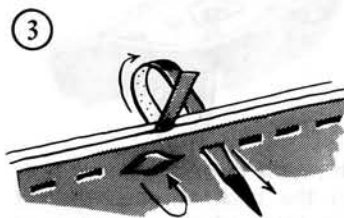
Punch lacing slits with single, or multiple pronged lacing chisels.



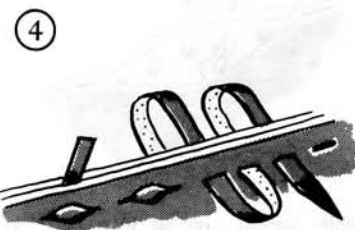
Begin lace as shown above. Note correct sides of lace.



Pull first loop tight and lace back through first slits of both leathers.



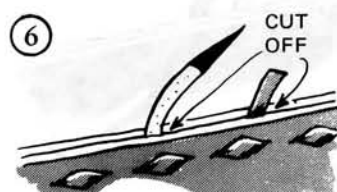
Pull first stitch tight. Turn needle and go back through next slit as shown.



Continue lacing. Pull stitches tight as you go.

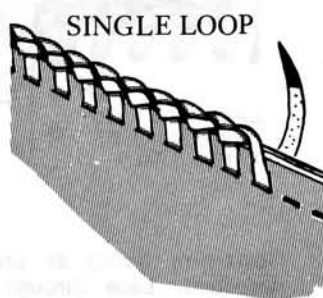


Lace to beginning stitch... through last slit. Lace back one slit (on back side) and push needle between leathers.

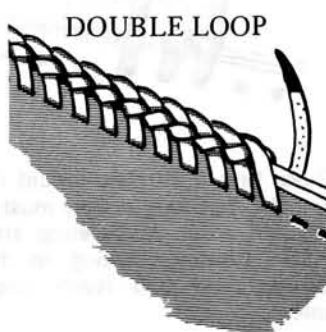


Pull all stitches tight. Cut off ends. Tap stitches flat with a mallet.

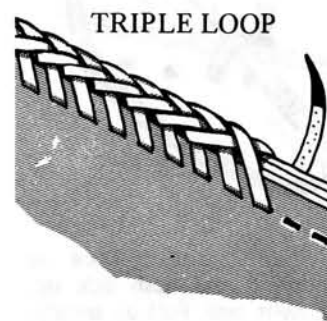
SELECTING THE LACING STITCH FOR EDGE COVERAGE



SINGLE LOOP



DOUBLE LOOP

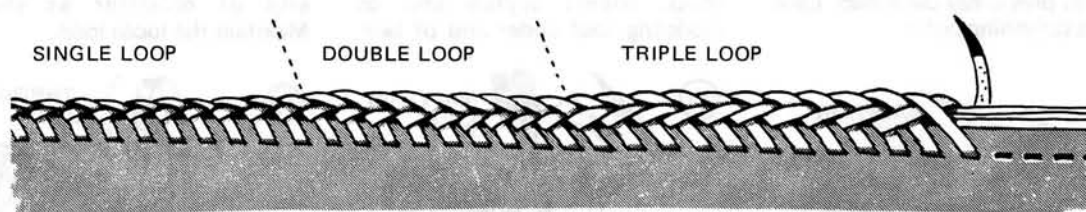


TRIPLE LOOP

The SINGLE LOOP stitch is best suited for lacing the edges of lightweight leathers or single thickness of leather, as little lace is required to cover the "raw" edge.

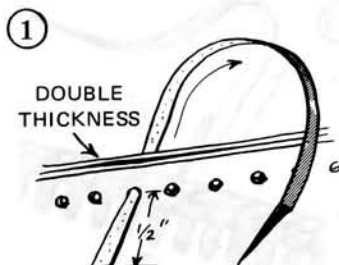
The DOUBLE LOOP stitch covers a wider area and is used on heavier leather than the single stitch. It covers a wider surface especially where two thicknesses of leather require more lacing to cover the edge.

The TRIPLE LOOP stitch is used where the Double Loop is not adequate. This stitch is used where two or more thicknesses of leather require additional lacing to cover the "raw" edges.



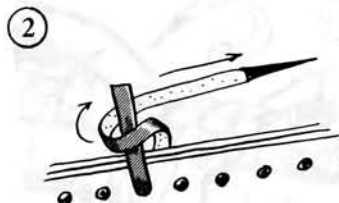
On special projects, where variations in thicknesses of leathers occur, the lacing can be joined continuously from one kind of stitch to another. The stitching can also be reversed as thicknesses of leathers decrease. Practice lacing on scrap leathers.

THE SINGLE LOOP

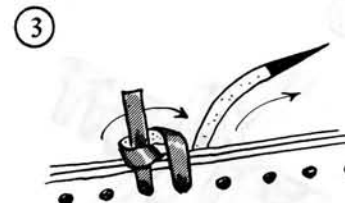


Front side of project must face lacer.

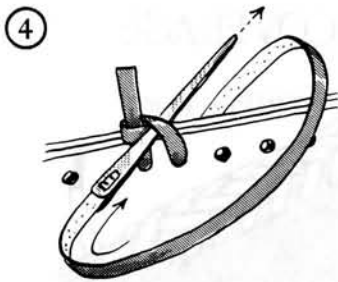
Begin at top of project, push lace through front side. Leave about 1/2" of end.



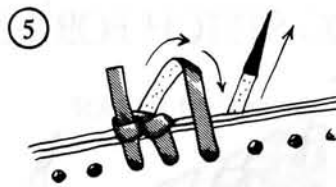
Fold end up and loop lace around as shown. Hold with fingers until 1st stitch is tightened.



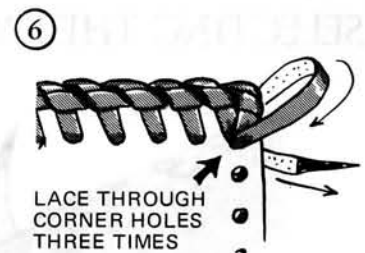
Lace through 2nd hole. Be sure smooth side of lace faces you, as shown in drawings. Pull up snugly.



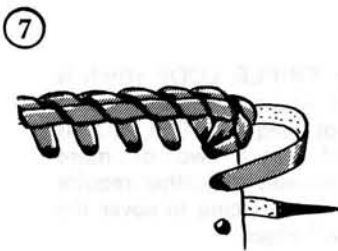
Push needle under lace as shown...with the flesh side up. Do not twist lace. Pull up snugly.



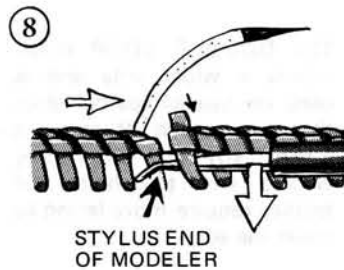
These first 2 stitches should not be tight, but snug as they must be adjusted when completing steps 8-16. Continue lacing in this fashion until you reach corner hole.



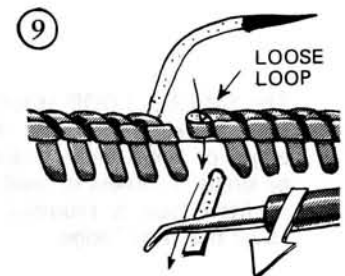
Continue lacing as previously described. Lace through corner holes three times, as shown.



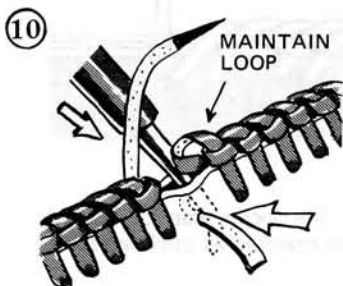
Each stitch must go under the loop as previously described. Lace to the beginning point.



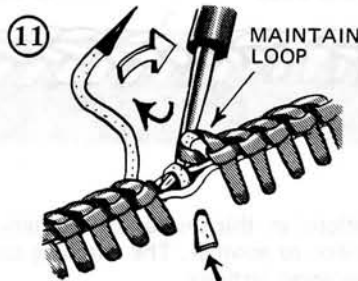
Lace through last hole and under loop. Insert stylus end of modeling tool under end of lace.



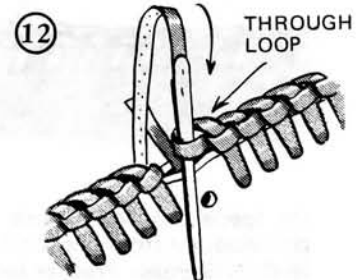
Pull end of lace out of loop with end of modeler as shown. Maintain the loose loop.



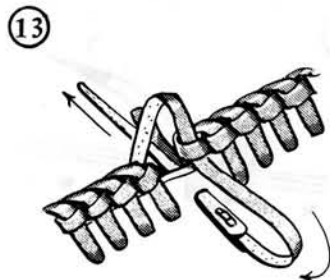
Insert stylus between the leathers and hook over the end of the lace as shown above.



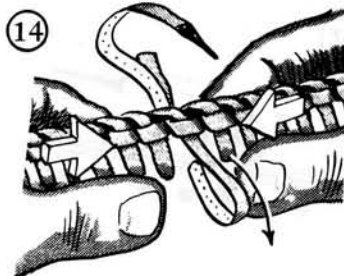
Carefully pull up stylus and gradually pull end of lace out of the hole; up between leathers.



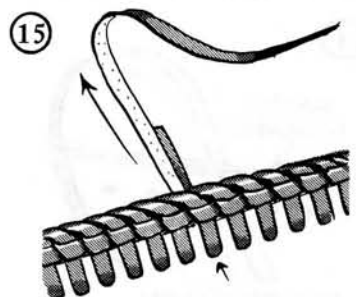
Push needle down through the loose loop, carefully, as shown.



Push needle through hole...up between the leathers. Be sure lacing does not twist.

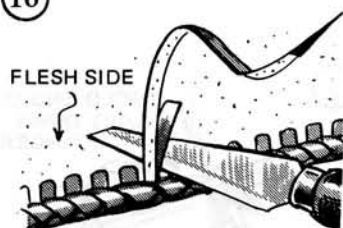


Adjust the stitches by pushing and working the lacing together with fingers as shown.



Pull lacing up snug and adjust so that all of the stitches appear even.

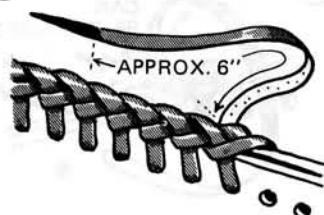
16



Carefully cut off ends from the flesh side, as shown. Tap lacing flat with mallet, or roll under a wooden dowel.

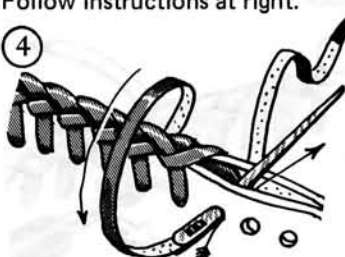
SPlicing INSTRUCTIONS

1



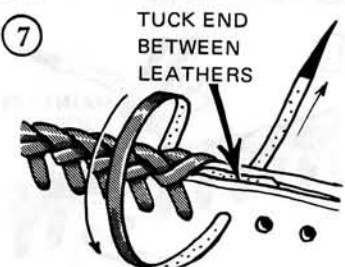
Approximately 5" to 6" of lacing is required to make the splice. Follow instructions at right.

4



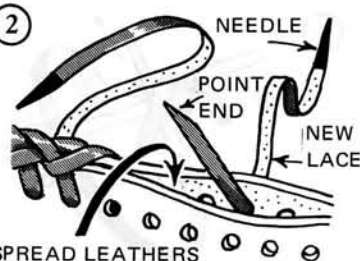
Lace with the old lacing up to the new lace. Push the needle up between the leathers again through the 1st hole after the new lace.

7



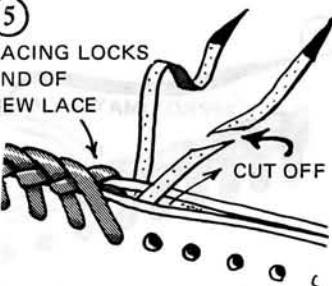
Tuck the end of the old lacing between the leathers and lace over it with the new lace so that it is caught and won't show.

2



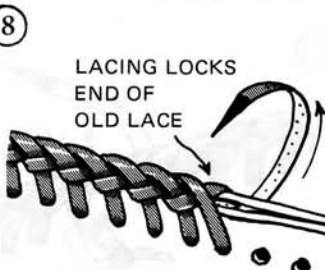
Insert newly threaded needle down between leathers, 3-4 holes from lacing; pull out back side. Leave $\frac{3}{4}$ " of end.

5



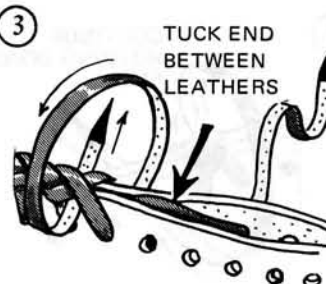
Pull the old lace up tight, cut off the end at an angle, allowing about $\frac{3}{4}$ " to remain.

8



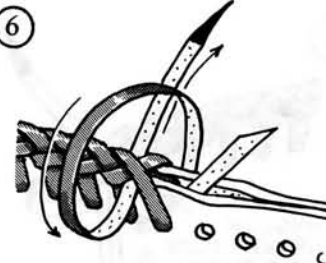
Continue lacing and lace over ends, as instructed, to lock them in place.

3



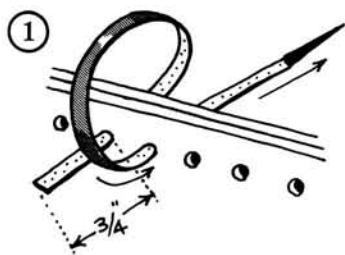
Tuck end of lace between leathers and continue lacing your project with the old lace.

6

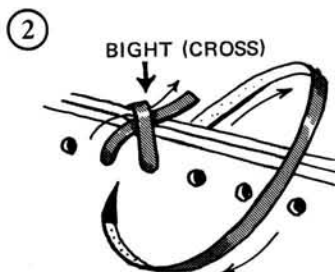


Now begin lacing the rest of your project with the new length of lace. Push needle under the bight as before for a double loop stitch.

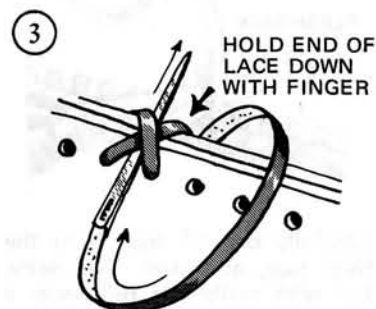
DOUBLE LOOP STITCH



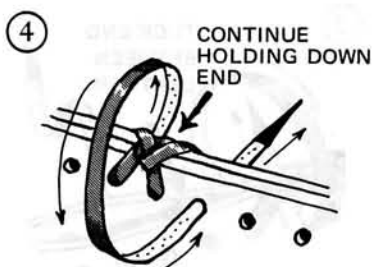
Beginning on front side of project pull the needle and lace through the 1st hole. Leave about $\frac{3}{4}$ " of the lacing end and go on to lace the next hole.



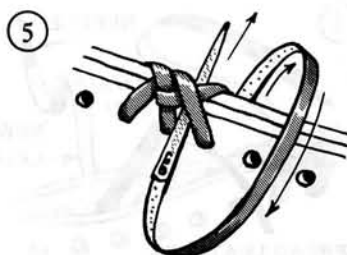
Pull the stitch tight; lacing over the end you left free. This forms a cross or "bight".



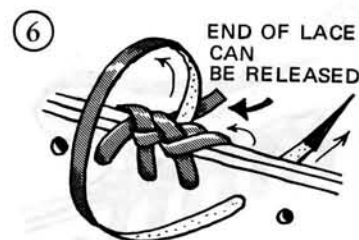
Push the needle under the cross or bight. Hold the end of the lace down on the opposite side.



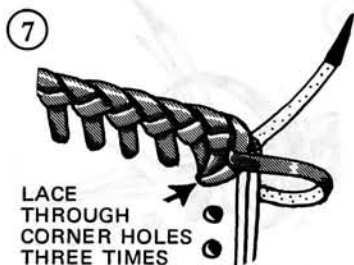
Pull the stitch under the bight snug but not tight. Lace through the next hole.



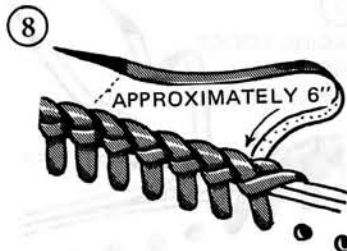
Follow the same procedure as in Steps 1 and 2 making a cross or bight. Once again go under the bight and pull the stitch snug.



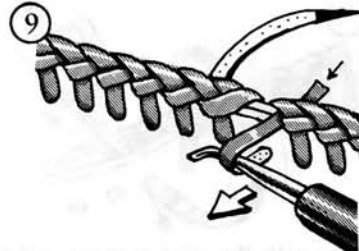
Lace through the next hole. The end of the lace can now be released as it is now locked in place.



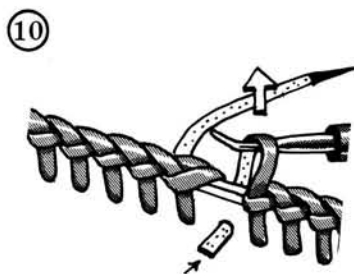
When lacing a corner, stitch it three times instead of just two. Be sure to go through bight on corner stitches.



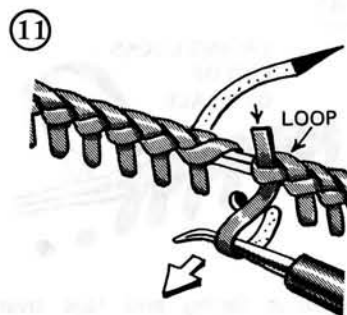
Lace until only 5" or 6" of lacing remains. You will now have to splice with a new length of lace. (See splicing instructions).



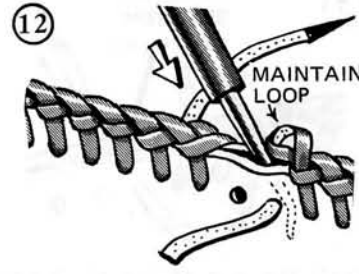
Continue lacing to starting point. Use modeling stylus to pull end of lace free of stitches.



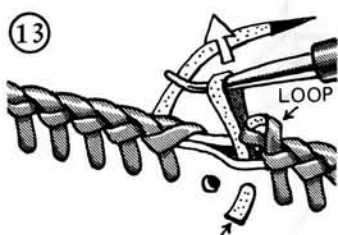
From back side pull the end of lace out of the hole.



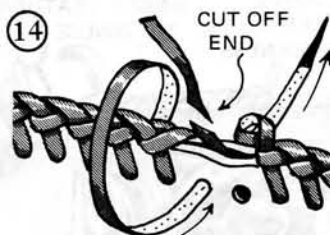
From front side, pull end of lace out of the loop.



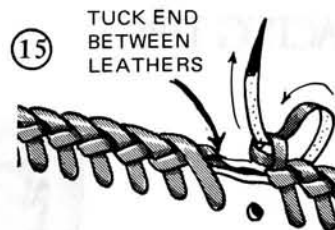
Push stylus down between leathers and hook it over the end of the lace.



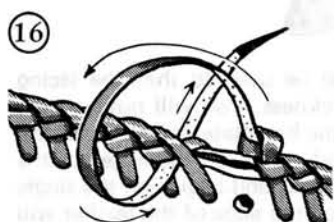
Pull end of lace out of hole and up between leathers. Two empty holes should appear on the front side; one on the back.



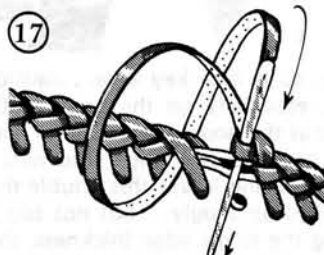
Cut off the end of the lace you have pulled out and tuck the end of the lace between the leathers. Lace through the next hole.



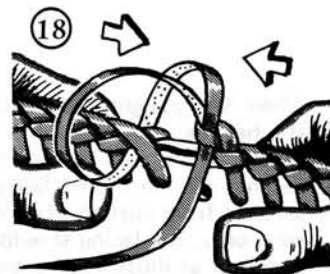
Pull stitch tight and lace up through loop from the back side. All holes on the back side should be filled.



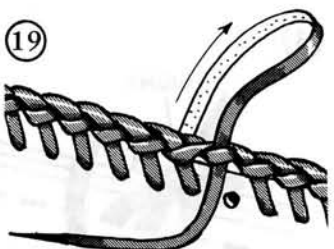
Lace under the bight...do not pull this stitch tight.



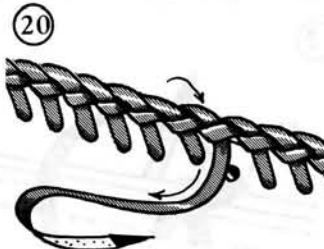
Carefully cross over as shown...and push needle down through the loop.



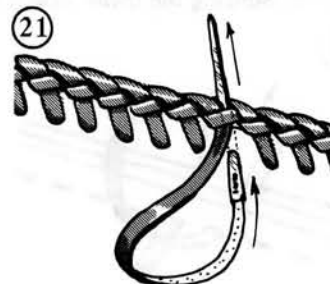
Pull needle through. Push laced edges together to adjust starting loops for easier completion.



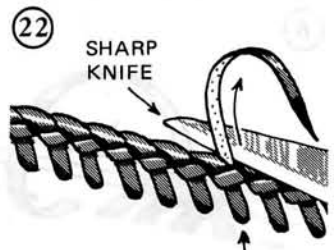
Pull any slack out of the first loop and adjust lacing with fingers to make all your stitches appear equal.



Pull the end of the lacing down tight. Make sure all stitches appear even and equally spaced.

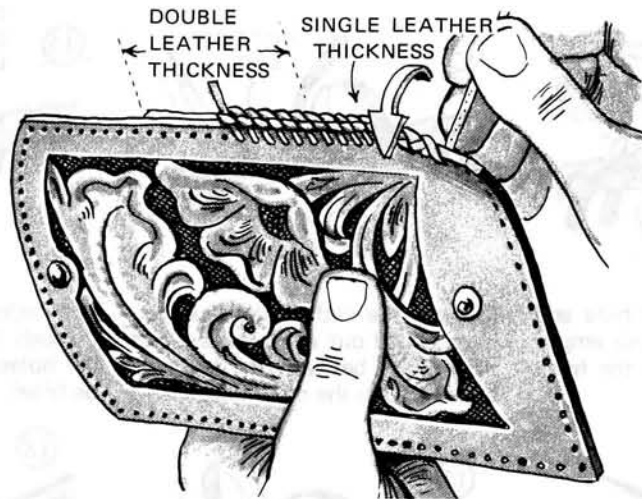


Push needle through the last hole as shown. Bring it up between the leathers and out between the lacing.



Carefully cut off the end of this lacing. Tap lacing flat with a mallet or roll flat with a wooden dowel.

LACING TIPS

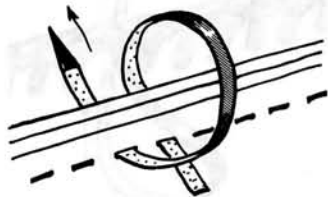


When lacing light weight leathers, such as a key case, .caution must be used so that the lacing stitches are not pulled too tight. .especially on the single leather thickness. You will note on the sketch above, that the lacing begins at the double thickness of leather (the key plate panel). Here, the stitches can be pulled fairly tight as there is enough thickness, or body, to keep the edges of the leathers from curling over. When the lacing leaves this double thickness area and begins on the single edge only, the lacing should be pulled up snugly. .but not too tight, or the edge of the leather will curl over as illustrated. When lacing the single edge thickness, the thumb and fingers of the left hand should be held close to the lace and the stitches not pulled too tight. .so as to not curl the edge.

THE TRIPLE LOOP

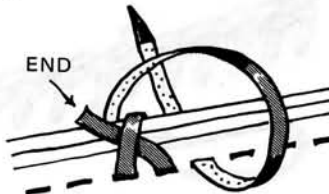
NOTE: Splicing the triple loop is same as for single and double loop stitches.

①



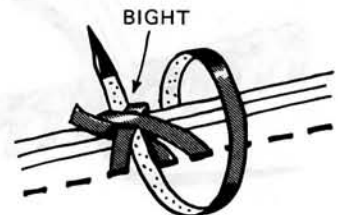
As with other types of stitches, the front side of the project should be facing you. Begin as shown. Lace through next hole to left.

②



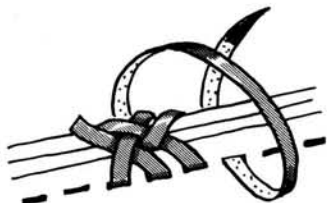
Pull stitch snug over end. Lace through first hole to right.

③



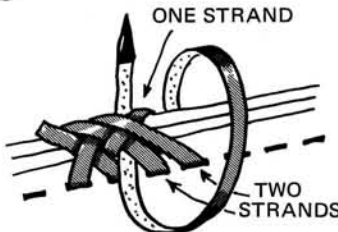
Pull stitch snug; lace under bight (cross) same as with double loop stitch.

④



Pull snug; lace through next hole.

⑤



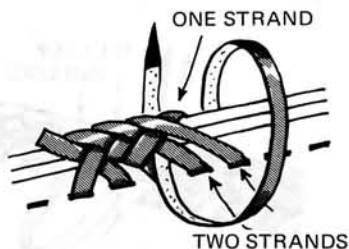
Lace under bight. However, lace goes under TWO strands on front; under ONE strand on back side.

⑥



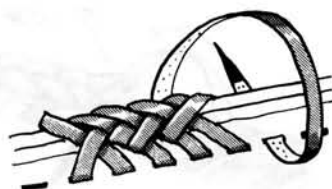
Pull snug; lace through next hole.

7



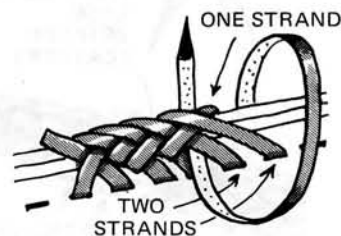
Lace under bight; under TWO strands on front, ONE strand on back.

8



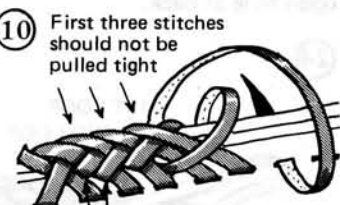
Pull up snug; lace through next hole.

9



Continue lacing; under TWO strands on front, ONE at back.

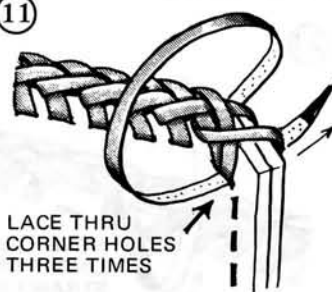
10



NOTE: Two loops over one strand appears only at beginning.

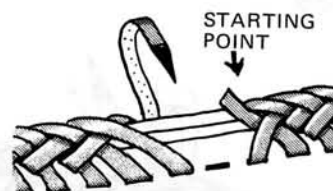
Continue lacing. First 3 stitches pulled up snug—but not tight. Pull all remaining stitches tight.

11



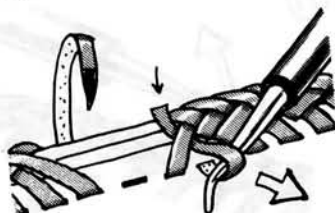
Be sure to go under two strands at front; one at back with each stitch at corners.

12



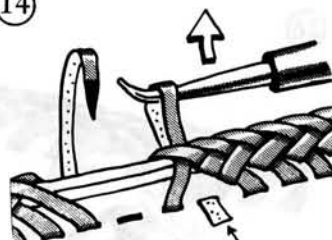
Splice often as required. Splice same as for double loop. Continue lacing to starting point.

13



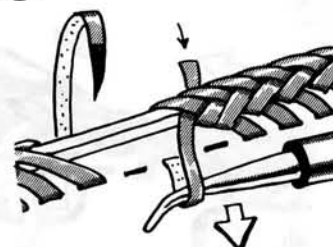
Begin removing end of lace as shown.

14



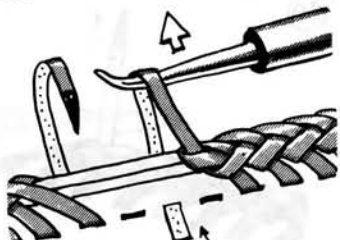
Pull end out of hole from back side.

15



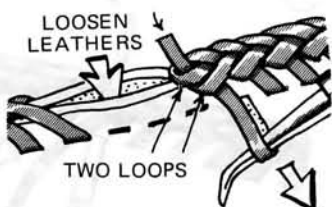
Pull end from under lacing at top.

16



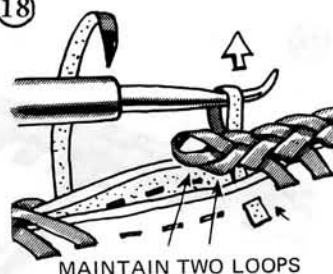
Pull end out of hole from back side.

17

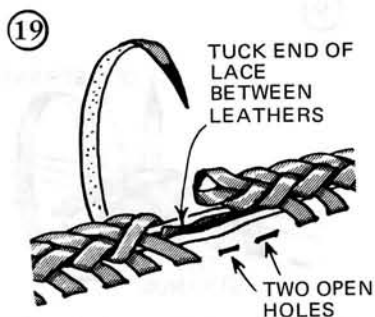


Use stylus to loosen and spread leathers; breaking cement adhesion.

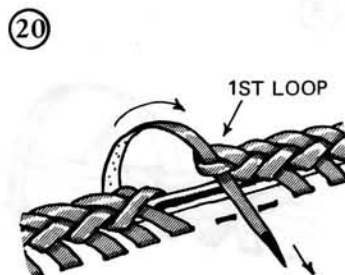
18



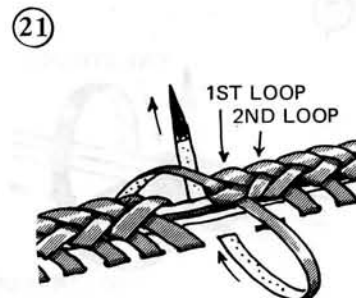
Pull end up BETWEEN leather. BE SURE to maintain the two loops.



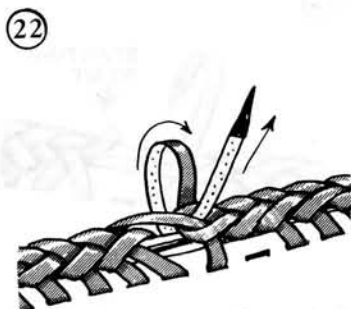
Trim some end; tuck between leathers. Lace to 2 open holes on front; one open hole on back.



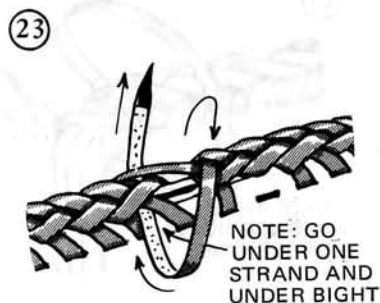
Lace under bight and down through 1st loop.



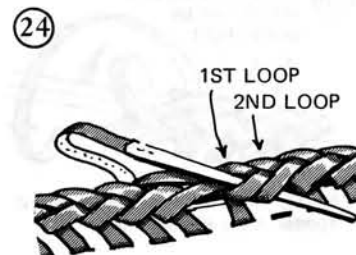
Lace through next hole; filling open hole at back.



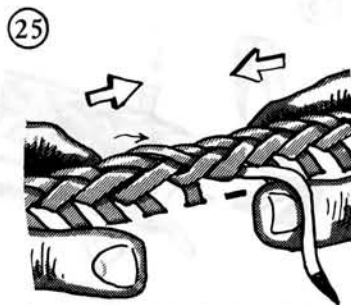
Lace UP through 1st loop.



Lace under bight; under ONE strand only at front.



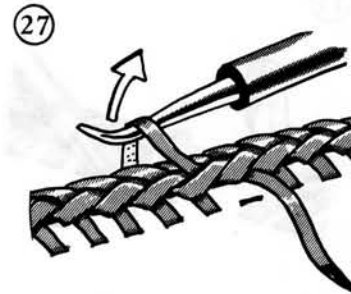
Carefully push needle down through BOTH loops.



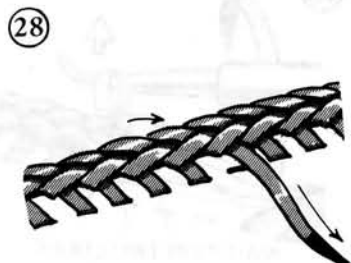
Push on lacing with fingers to adjust.



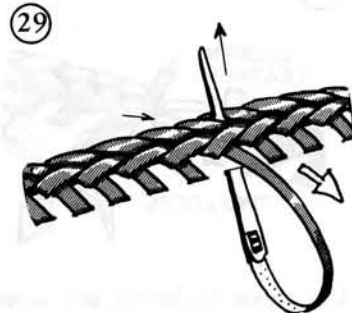
Go back to step 23 and begin pulling slack out of lace.



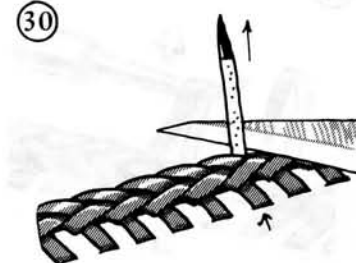
Continue pulling slack and tightening stitches.



Pull slack down through both loops. Lacing should be well adjusted as shown.



Lace through remaining hole and UP between lacing at top.



Carefully cut off end. Tap lacing around project and rub or roll for evenness.

TECHNIQUES OF STRUCTURAL ASSEMBLY :

REVIEW TOPICS

1. What is the difference in the Whip stitch and the Running stitch?
2. When should the Single Loop stitch be used?
The Double Loop stitch? The Triple Loop stitch?
3. Which side of the project should face the lacer?
4. When should lace be applied?
5. How many times should lace go through the corner holes?
6. What causes the laced edge of a project to curl?
7. What are some of the basic assembly tools?

TECHNOLOGY OF THE TITANAL ASSEMBLY

REVIEW 1962

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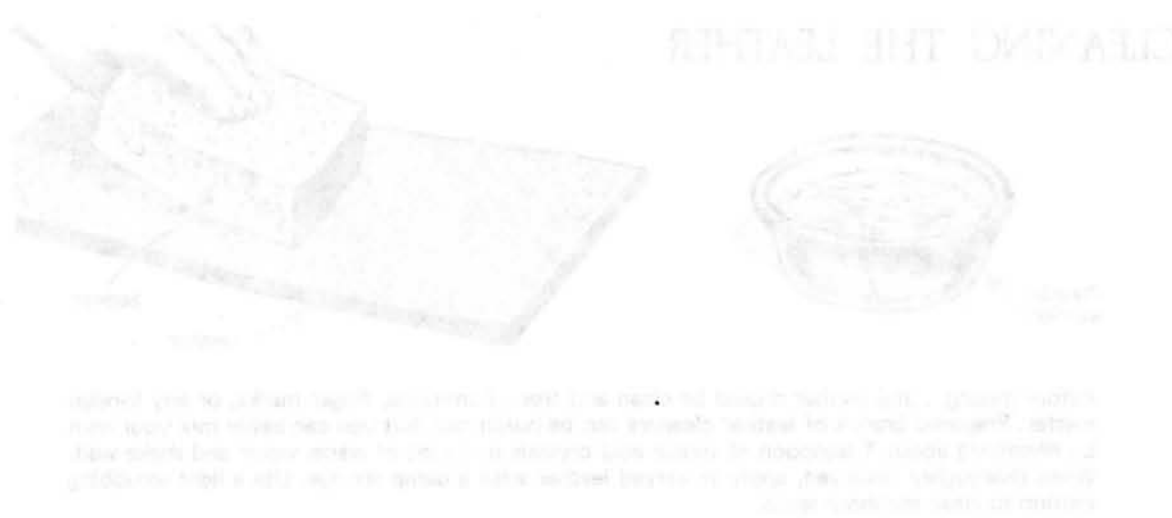
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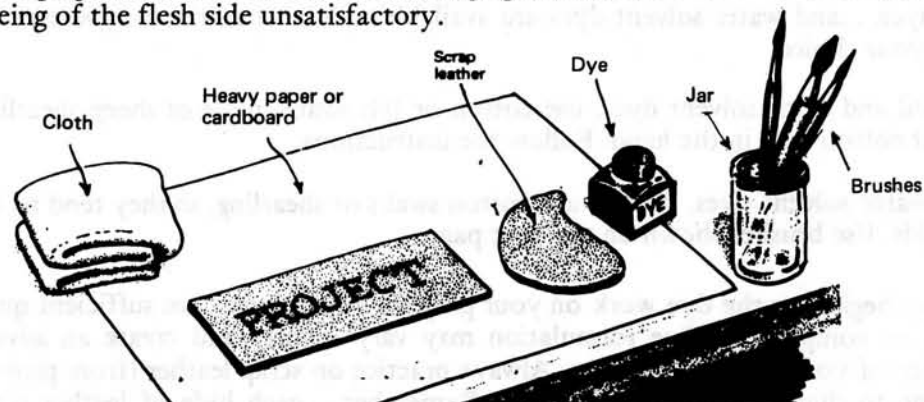
DYEING AND FINISHING LEATHER:

Color enhances the beauty of many decorative designs. However, color should be limited to amplifying the carved and tooled design. Too much or an overall coloring tends to defeat the use of genuine leather and detract from its value and beauty.

Since genuine leather enjoys a rustic image, low color toners or antique finishes which permit the natural grain to show through produce very attractive finished projects.

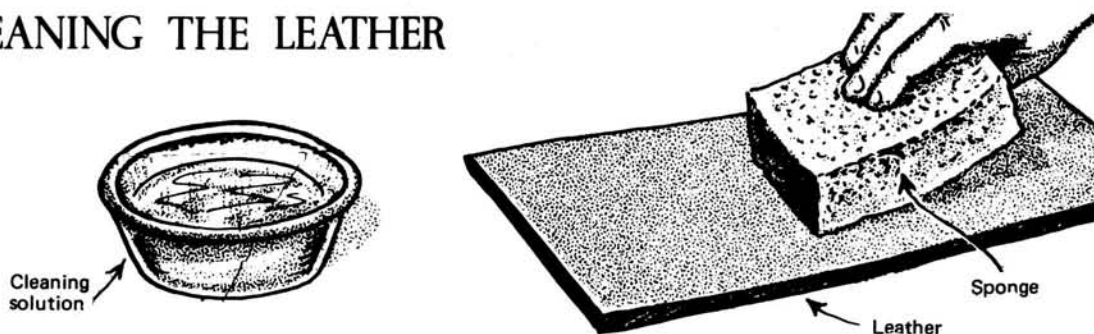
This chapter describes and illustrates proper selection of leather dyes and finishes for use on specific projects.

The "grain layer" (hair side) of the leather consists of about 1/5th thickness of the hide. The fiber structure of this part of the leather is more closely knit than the remainder of the hide, therefore more desirable for carving, stamping, and dyeing. Vegetable tanned and bark tanned leathers are most suitable for carving and dyeing. . .and are prepared for this purpose. During the tanning processes, the honeycomb structure of fibrous interlacings are filled with oils and other tanning agents. It is these oils and tanning agents that give "life" to the leather. . .and also makes dyeing of the flesh side unsatisfactory.



Prepare your work surface so that everything is at your fingertips; seat yourself in a comfortable position free of tension or strain.

CLEANING THE LEATHER



Before dyeing. . .the leather should be clean and free of smudges, finger marks, or any foreign matter. Prepared brands of leather cleaners can be purchased, but you can easily mix your own by dissolving about 1 teaspoon of oxalic acid crystals in a pint of warm water and shake well. When thoroughly dissolved, apply to carved leather with a damp sponge. Use a light scrubbing motion to clean stubborn spots.

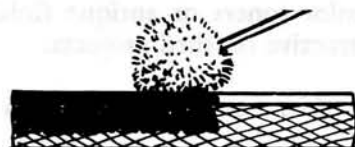
DYE PENETRATION



The first application usually penetrates only the grain layer. Swab on liberally to ensure coverage.



The second application penetrates an equal amount more into the coarser fibers. Apply liberally.



A third application will penetrate deeply, as previous applications have "opened the way" for the dye.



Foreign matter. . .such as wax residue, a drop of cement, oily finger marks, will retard dye penetration.

SOLID COLOR DYEING

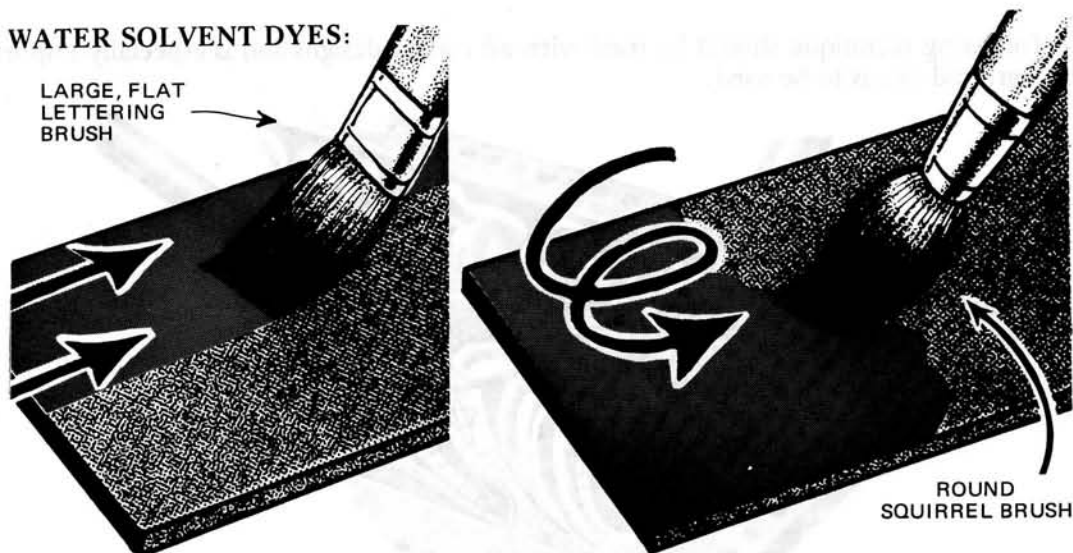
Prepare leather for dyeing by cleaning as instructed. Many brand names of oil and spirit solvent dyes. . .and water solvent dyes are available at leather stores everywhere. Use the brand name of your choice.

For oil and spirit solvent dyes, use cotton or felt swabs, piece of sheep shearling, or wad of absorbent cotton held in the hand. Follow the instructions.

For water solvent dyes, do not use cotton swabs or shearling, as they tend to hold back the color solids. Use brushes shown on the next page.

Before beginning the dye work on your project, be sure you have sufficient quantity of dye on hand to complete it. Dye formulation may vary slightly and create an adverse effect in appearance of your finished projects. Always practice on scrap leather (from project) BEFORE attempting to dye your finished product! Remember. . .each hide of leather may produce a slightly different shade of the same color, due to chemical changes during tanning, etc.

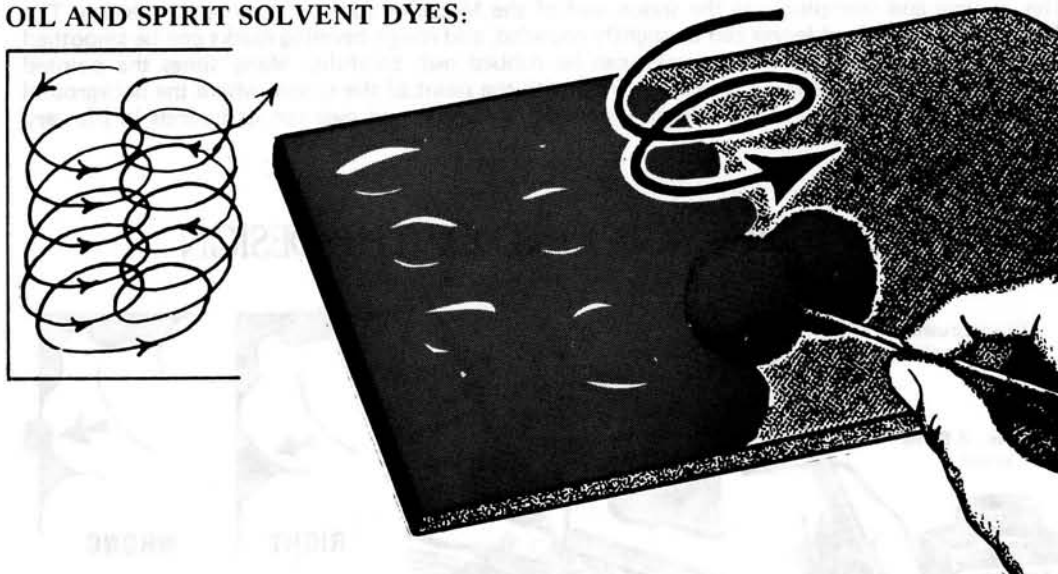
FOR WATER SOLVENT DYES:



When dyeing with the lettering brush, use cross, and diagonal strokes for second and third applications of dye to obtain a more even job.

When you use the squirrel brush, follow the circular motion shown above.

FOR OIL AND SPIRIT SOLVENT DYES:

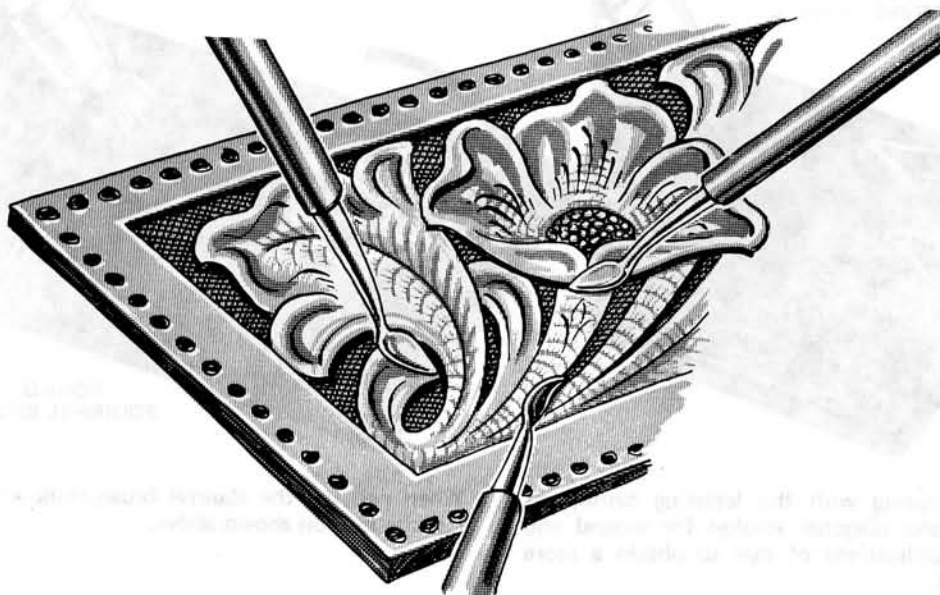


Dip applicator in color and begin in upper left hand corner. Move quickly in a circular motion so that each stroke slightly overlaps the last, as shown above. When strokes of color begin to thin, dip applicator into color and resume motion until entire project has been covered.

CAUTION: Protect hands from direct contact with oil and spirit solvent dyes as stains are difficult to remove from skin.

When dry, you'll note darker and lighter spots; dye job is not even. This will be due to heavier penetrations of dye when the applicator first touched the leather. One application of dye is usually not sufficient. Go over the entire project again, in the opposite direction, with the same procedures previously described. Apply as many dye coats as necessary to achieve desired results.

This following technique should be used with all carved designs and is especially important when background dye is to be used.



After carving and stamping, use the spoon end of the Modeling tool to clean up the design. The edges of the flowers and leaves can be slightly rounded, and rough beveling marks can be smoothed out. Other "out of place" tool marks can be rubbed out, carefully. Many times the pointed background areas can be more clearly defined with the point of the spoon, where the background tool has marred portions of the raised edges of the design, and over-ran its bounds in the very pointed areas.

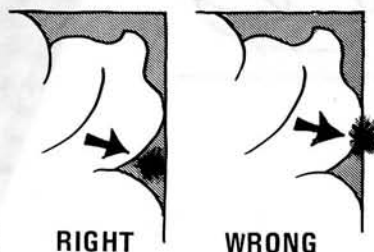
HOW TO DYE THE BACKGROUND OF THE DESIGN



Before dyeing the project, practice on scrap leather. Twist the brush clockwise to point the bristles.

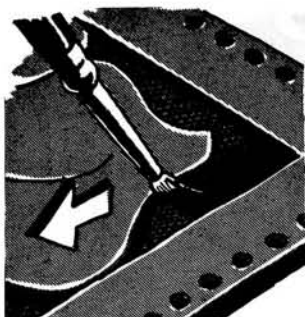


Begin dyeing in the open areas. Always touch the brush to the scrap leather first to remove excess dye before applying to the project. Too much dye will run and "bleed" over the edges of the design.

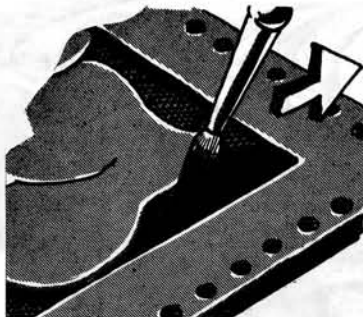


RIGHT METHOD: Here the brush was pushed to the center of background first, minimizing danger of dye "bleeding" over design.

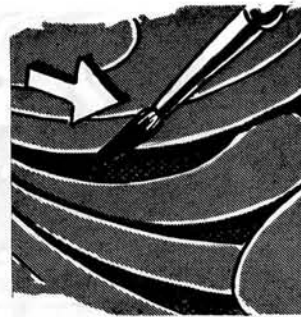
WRONG METHOD: Here dyeing was started in small area. Excess dye has spread and crawled over the edges of the design.



Begin dyeing in the open areas. Always touch the brush to the scrap leather first to remove excess dye before applying to the project. Too much dye will run and "bleed" over the edges of the design.

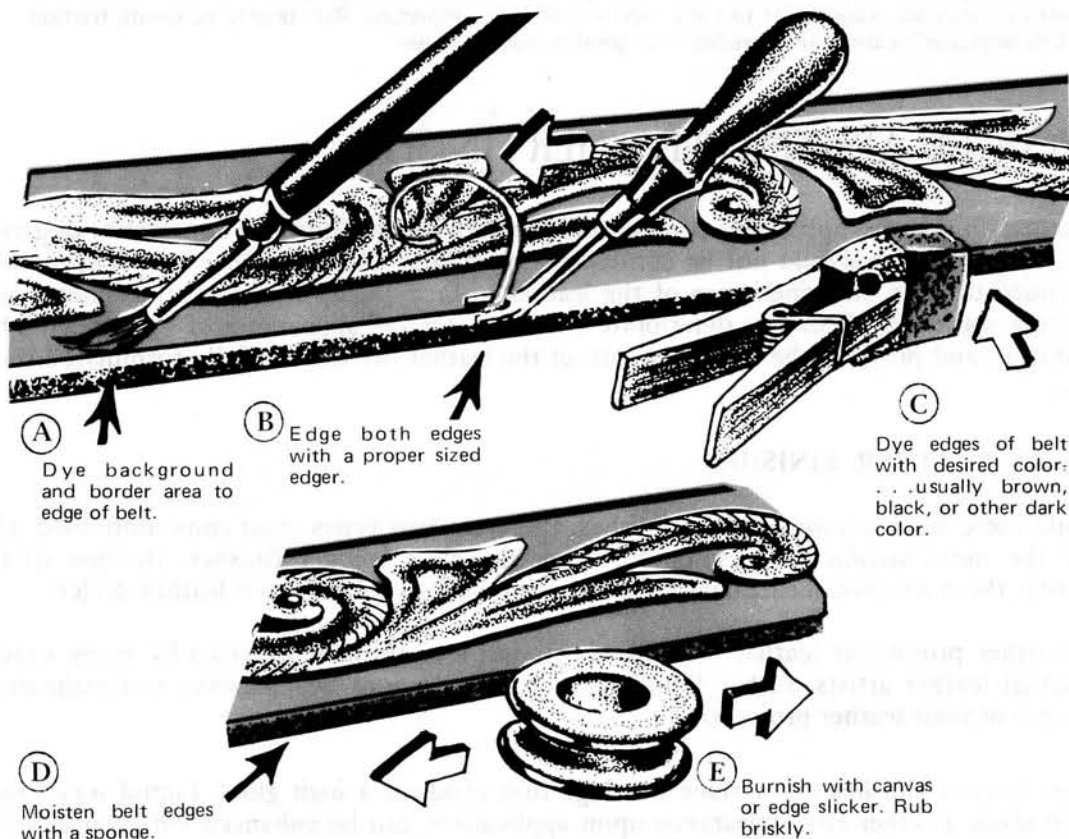


When most of dye is exhausted, point brush by twisting clockwise on scrap leather; complete dyeing as shown.

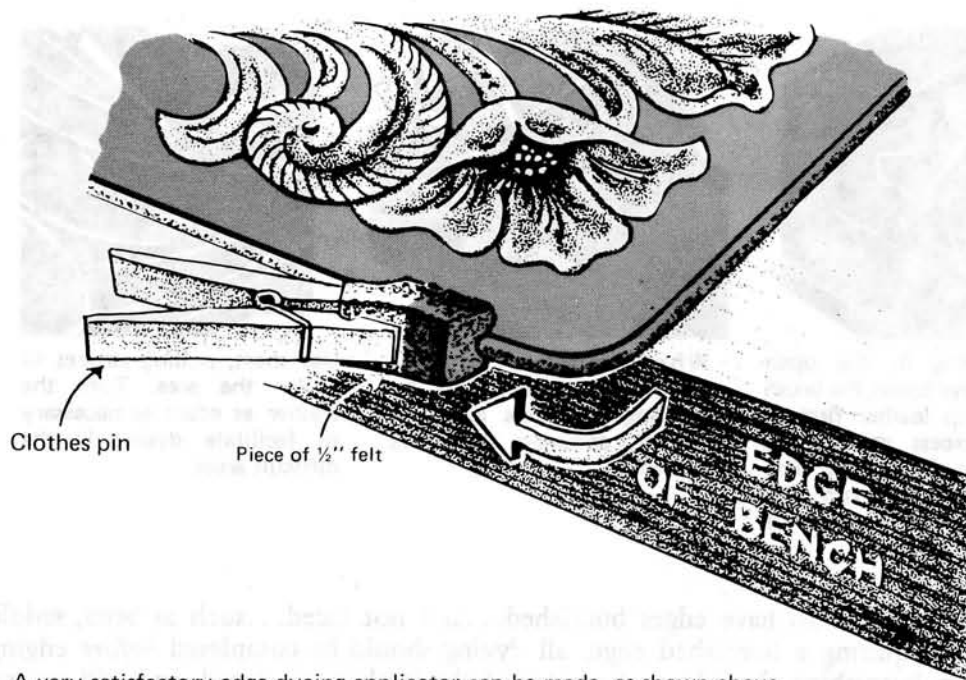


Use short, pulling strokes to cover the area. Turn the leather as often as necessary to facilitate dyeing in the difficult areas.

Whenever a project is to have edges burnished. . .and not laced. . .such as belts, saddles, or hand-sewn edges requiring a burnished edge, all dyeing should be completed *before* edging and burnishing. When burnishing the edges, the pores of the leather are closed and will not readily accept the dye. By dyeing these borders and edges *before* burnishing, the dye has an opportunity to fully penetrate the leather and a more satisfactory job results.



Follow the steps above to correctly dye the borders of the belt. Also, the correct procedures are indicated for edging, dyeing, and burnishing the unlaced edge.



A very satisfactory edge-dyeing applicator can be made, as shown above.

On larger projects, follow the same procedures. Place the leather on edge of the bench, as shown. Dye the edge, moisten the edge with a sponge, and burnish to a high lustre. If too wet, the edge will not burnish properly. If too dry, add a little more moisture. Rub briskly to create friction. "Elbow grease" is the main ingredient for good burnished edges!

PURPOSE OF APPLYING LEATHER FINISH:

Leather finishes are applied to protect and preserve the qualities and appearance of genuine leather. These finishes should not be confused with leather dyes and other formulations which are intended to alter the appearance of the leather surface. Light, heat, and atmospheric condition have a marked tendency to deteriorate the character and appearance of leather. To inhibit deterioration and preserve the lasting beauty of the leather, we use carefully formulated leather finishes.

TYPES OF LEATHER FINISHES

While there are numerous leather finishes, there are two types most commonly used which achieve the most satisfactory results. First are the clear lacquer finishes. Because of their popularity, there are several excellent clear lacquer finishes available from leather dealers.

The other prominent leather finish is the liquid wax finishes preferred by many exacting professional leather artists. Either liquid wax or clear lacquer will preserve and maintain the appearance of your leather projects.

Clear lacquer finishes are surface coatings that produce a high gloss. Liquid wax finishes which produce a rather flat appearance upon application, can be enhanced with gentle buffing and polishing to produce a pleasing luster. When more gloss is desirable, clear lacquer can be applied over the liquid wax finish.

When spirit solvent color dyes have been applied to the leather, it is somewhat difficult to apply clear lacquer finishes without disturbing the color. It is best to apply a light coating of liquid wax finish before applying a clear lacquer. Conversely, where water soluble dyes are used, clear lacquer, applied carefully, performs best.

PREPARATION

Before applying leather finish, check the following carefully.

1. Be sure that the surface area is free from dirt, dust, or other foreign matter.
2. Any final touches or clean-up work in the tooled design must be completed prior to applying finish.
3. If the leather is still damp from the casing during the application of the design, allow it to dry thoroughly before applying clear lacquer leather finish.
4. Remember when you apply the leather finish, you seal off the leather surface. Therefore, complete applying desired leather dyes before applying finish.
5. If you are using a sheep wool applicator, carefully brush or comb any loose wool or foreign matter from the applicator before dipping into liquid finish.
6. If you use a cellulose sponge for liquid wax, be sure it is free of foreign matter and slightly dampened to ensure uniform absorption.

CLEAR LACQUER FINISHES

To apply clear lacquer finishes, be careful to apply only a very light coating. It is best to saturate the applicator and rub briskly on a plain unprinted sheet of waste paper or cardboard to soften and lubricate the applicator before rubbing the leather surface. Apply a light coat of the clear lacquer to the entire grained surface with a circular motion. Apply more pressure and rub thoroughly over carved design surface to ensure penetration into all cuts and tool impressions. Strive to achieve a light uniform coating. There is often a tendency to apply too thick a coating of clear lacquer to the leather surface. This can result in cracking and/or unsightly streaking. Work quickly, using light circular motion, and be careful to avoid picking up too much lacquer on the applicator at a time.

When clear lacquer is exposed to air it tends to congeal. Excellent lacquer thinner products are available to help you maintain the clear lacquer at its original viscosity. These lacquer thinner products are also most useful in clean-up work.

LIQUID WAX FINISH

For finishing plain carved leather, many leather workers prefer liquid waxes. Both the latter and clear lacquer protect and preserve leather equally well. However, there are some instances when liquid wax is preferable. If leather has been dyed with spirit solvent dyes, liquid waxes can be applied as final sealers without disturbing or lifting the dyed colors.

Since most liquid waxes are water soluble, they tend to penetrate the grain surface to a greater degree than the clear lacquer finishes. The techniques of applications are the same,

however. Just dip a slightly dampened sponge into the liquid wax and apply to the leather with a circular motion. Many leather workers apply a very light coat of moisture to the leather surface before using liquid wax. This ensures consistent and uniform penetration of the liquid wax.

DO'S AND DON'TS

Do apply all finishes before assembly.

Do make sure the leather surface is clear and free from foreign matter.

Do use a consistent circular motion in applying leather finishes to avoid streaking.

Do not apply lacquer finishes over spirit solvent dyes.

Do not apply liquid wax finishes over water solvent dyes.

Do not bring lacquer finishes in contact with lace. It tends to cause the color to bleed off and can make the lace brittle.

Do not attempt to go back over clear lacquer finished surface after initial coat is applied.

Do not attempt to heat dry leathers as this tends to cook out the natural oils and cause the leather to lose its feel and life.

ANTIQUE FINISHING

Antique finishes, which come in various shades of brown, are vegetable stain materials combined with various chemicals, which provide for even distribution of the stain. The most common carrier solvent used in antique formulations is turpentine.

The early Spaniards brought to the Mexican continent a wealth of artistic skills and leather working know-how. Since sophisticated chemical formulation was not possible in their day, they had no leather dyes to implement the decor of their beautiful leather artifacts. They discovered that natural plant extracts could be used as a stain to produce rich, rustic tones on leather. Next, a method had to be devised to achieve even distribution of the stain over the surface. This was achieved by thoroughly mixing the stain extracts with mud. This putty-like substance was thickly packed over the leather surface and when it dried it was removed leaving only the rich antique tones. Modern chemistry has provided much better formulation for the use of today's leather worker, although the basic principles are the same.

The principle purpose of antique finishing is to achieve color uniformity while retaining the full appearance of the leather's beautiful grain surface. Most pigment dyes tend to cover up and distort the grain surface. The image of fine leather in the mind of most people is that of rich, rustic antique tones. The potential for the individual to develop his or her own special technique with antique finishes is wide open.

PREPARATION FOR APPLICATION OF ANTIQUE FINISH

Since the application of antique finishes, like most all leather dyes and finishes, requires quick start to finish action, it is best to prepare all materials and equipment in advance. You will need an applicator (a lightly dampened cellulose sponge works best), a protective covering for

your working surface such as newspaper or brown paper, a small amount of water for moistening the leather surface, plastic gloves or other protection for your hands, and a small amount of antique finisher in an easy-access open container.

APPLICATION TECHNIQUE:

Apply a very light, but consistent, coat of moisture to the grain surface and allow a few minutes for the moisture to penetrate. Dip lightly moistened applicator in antique finish, carefully wiping excess from surface of applicator on side of container. If leather surface has been carved and tooled, begin applying antique finish at center of carved design. Use a circular motion and apply antique finish over desired surface. If there is any area on the leather grained surface you wish to leave its natural color, apply a light coating of leather lacquer and allow to dry thoroughly before applying antique finisher. Many unique beautiful effects can be obtained through this technique.

You can achieve depth and degree of tone desired by applying additional coats of antique finisher. Be sure to use the same smooth circular motion.

It is important to allow ample time for the antique finish to dry before removing surface excess. After thoroughly drying, remove all surface excess with a smooth dry cloth. Brisk and thorough buffing will further amplify the beauty of your antique finish work.

To protect antique finished leather goods, which will be handled or exposed to other types of moisture, it is advisable to apply a protective coating of a good leather finisher. Great care should be exercised to apply leather finisher with a delicate touch since there is a tendency to disarrange the antique tones in the application of the leather finisher.

Antique finishes offer a vast challenge to the leather worker since there are unlimited possibilities for combining antique finishes and various colors of spirit solvent dyes. Rich, beautiful multi-tone effects can be accomplished through experimentation with these finishes.

DYEING AND FINISHING LEATHER: REVIEW TOPICS

1. Why should leather be cleaned before dyeing?
2. What causes an uneven dye job?
3. Why should the design be cleaned up with a modeling tool?
4. Why should dye-filled brush be touched to a scrap of leather first before applying dye to background area?
5. When a project is to have burnished edges, why should the dyeing be completed first?
6. What is the purpose in applying a finish to leather?
7. Why is leather usually moistened when antique finish is to be applied?

THREE LEATHER WORK PROJECTS

This chapter consists of three projects in which all of the techniques described in the preceding chapters are used. The three articles are a 6-hook key case, a billfold and a ladies handbag. The cutting pattern, transfer pattern and assembly instructions for each is included with detailed drawings of each step.

HOW TO CUT AND ASSEMBLE A KEY CASE

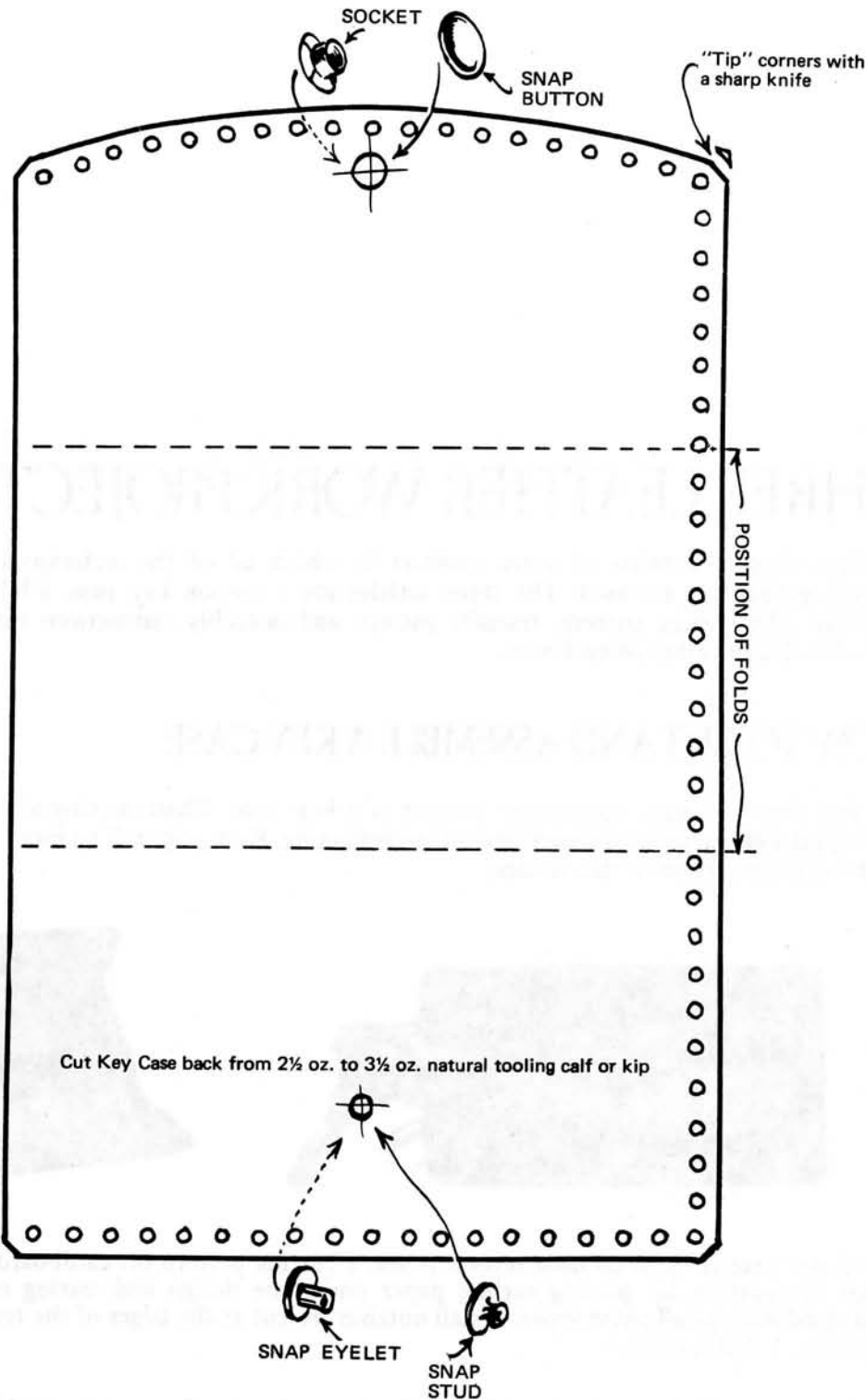
The first and most elementary project is a key case. When starting any new article, read through the entire set of instructions before beginning. Each step will be more easily understood as the work progresses if this is done.



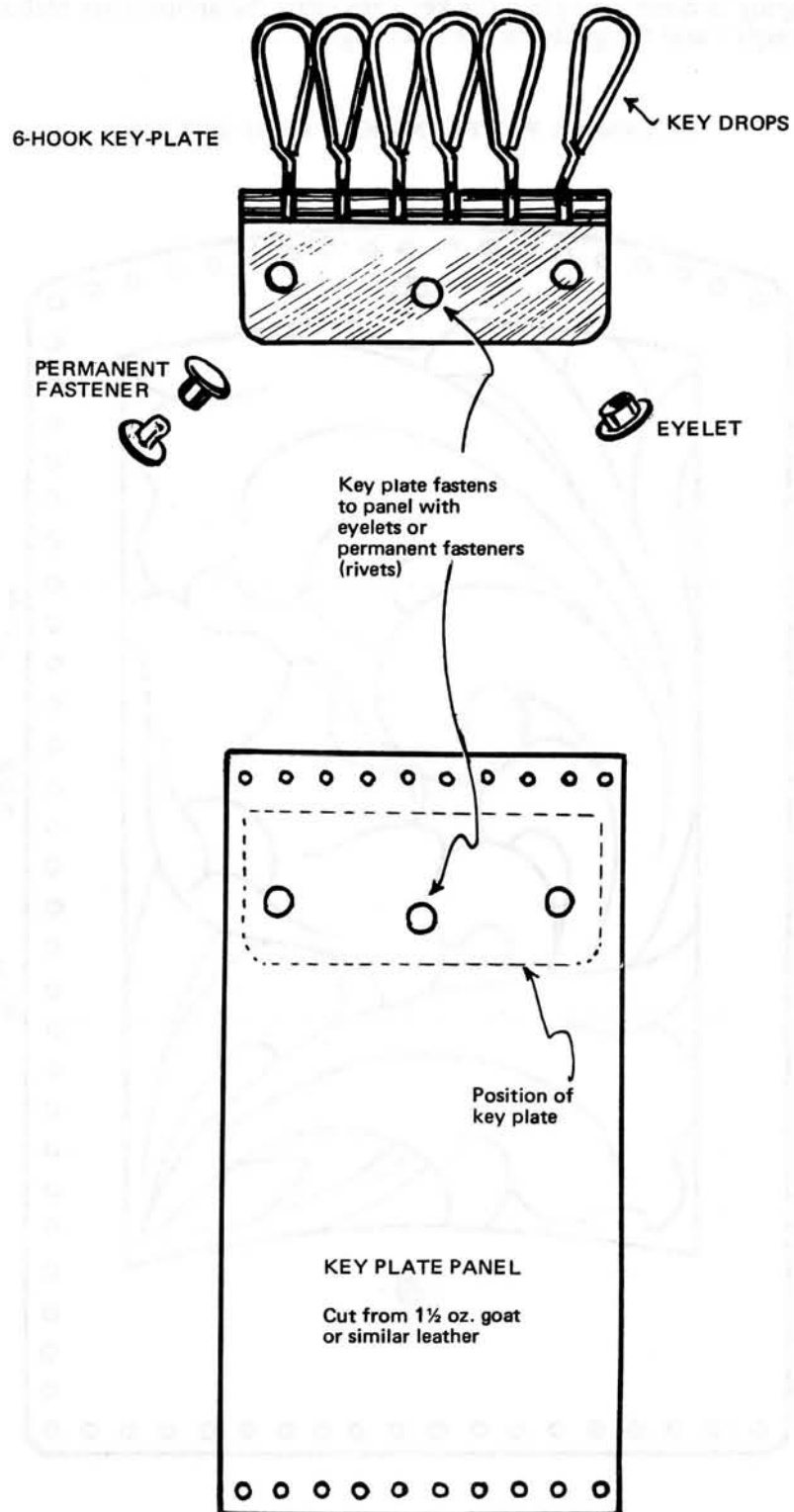
If the pattern is to be used several times, a cutting pattern on cardboard should be made. Make the pattern by putting carbon paper under the design and tracing carefully onto the cardboard with a ball point stylus. Small notches are cut at the edges of the template to indicate fold lines. Label each part.

Trace around this pattern with a ballpoint stylus on the leather. NEVER use pencil or ballpoint pen on leather.

CUTTING PATTERN – Key Case Back

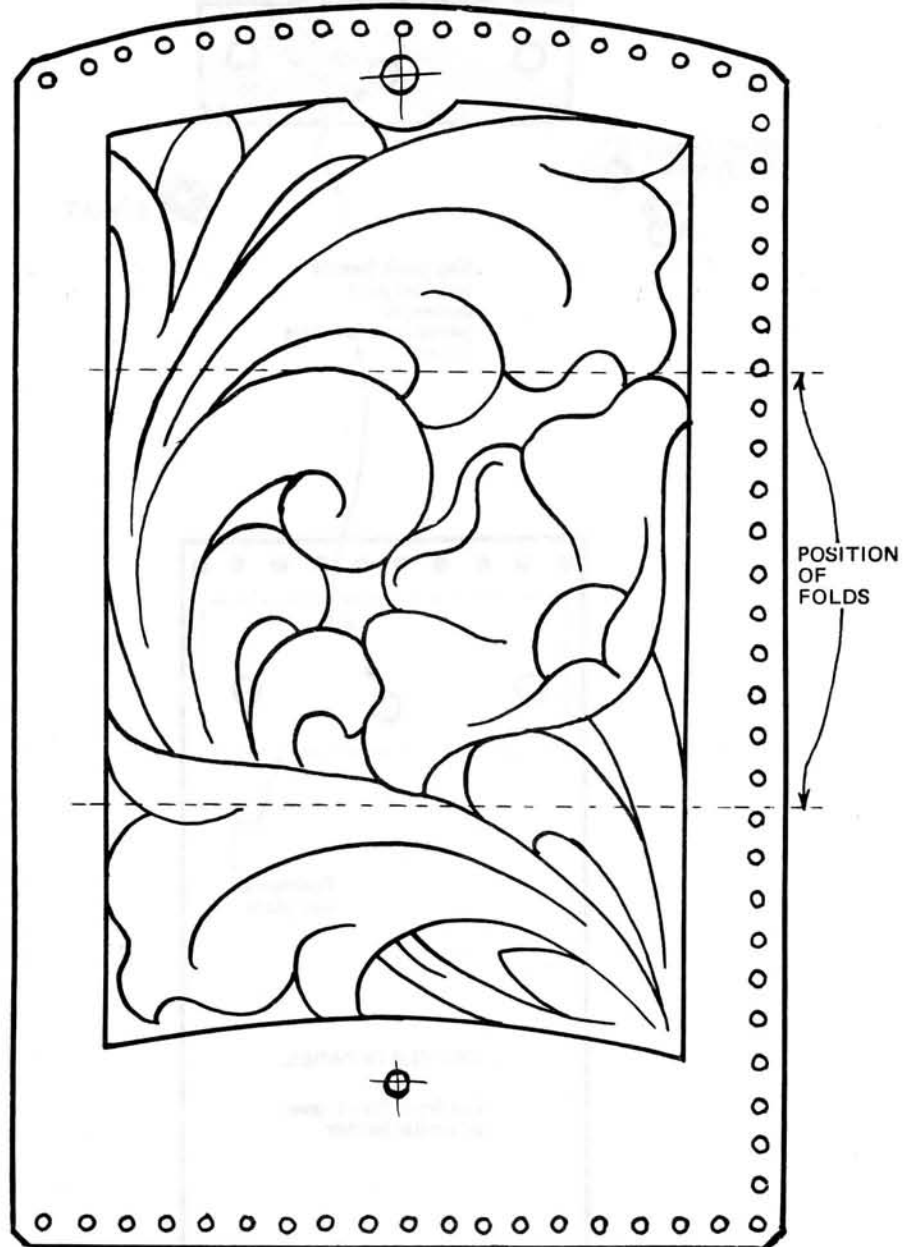


CUTTING PATTERN – Key Plate Panel



Trace the design for carving and stamping with a ballpoint stylus. When the design is transferred, start the tooling procedure by outlining the design with the swivel knife. After the carving and stamping is done, complete the key case using the appropriate techniques described in chapters 2 through 7 and the guide on the next page.

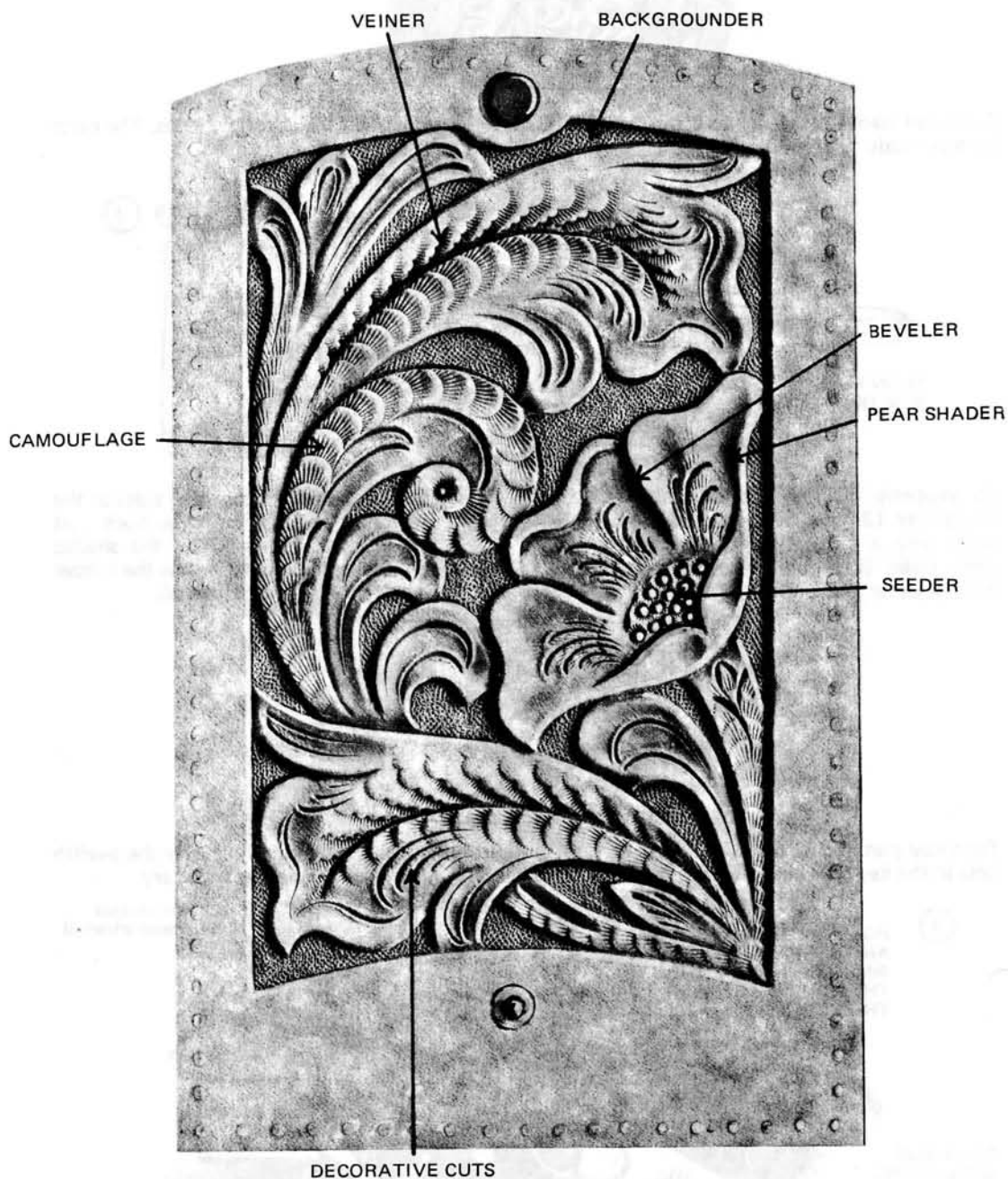
TRANSFER PATTERN - KEY CASE DESIGN



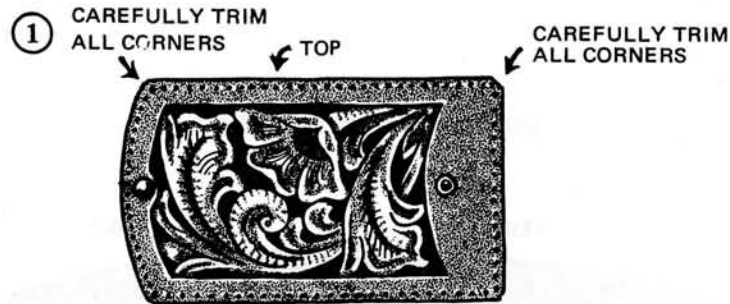
After cutting the design, check the leather for the proper moisture content. If drying spots begin to appear, add a little water with a damp sponge. If the leather is too wet, allow it to dry out a bit and return almost to its original color before beginning the stamping.

When the border lines enclose a design (as below), always bevel inside these border lines first, before using any other tool. After beveling the border, use the tools in the same sequence they are presented in the chapter on the basic stamping tools; i.e. Camouflage, Pear Shader, Beveler, Veiner, Seeder and Backgrounder.

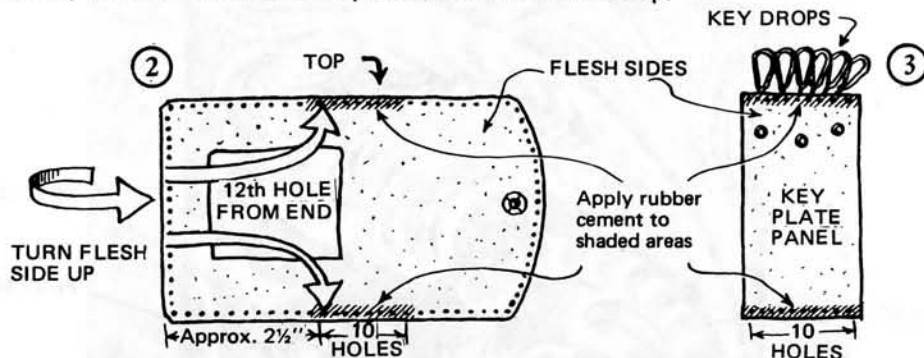
PHOTO CARVE PATTERN



ASSEMBLING THE KEY CASE

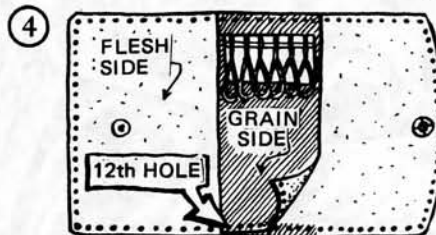


Carve and stamp the design as instructed on the previous pages. Add the decorative cuts. The parts are now ready to assemble. Turn the key case back with flesh side up.

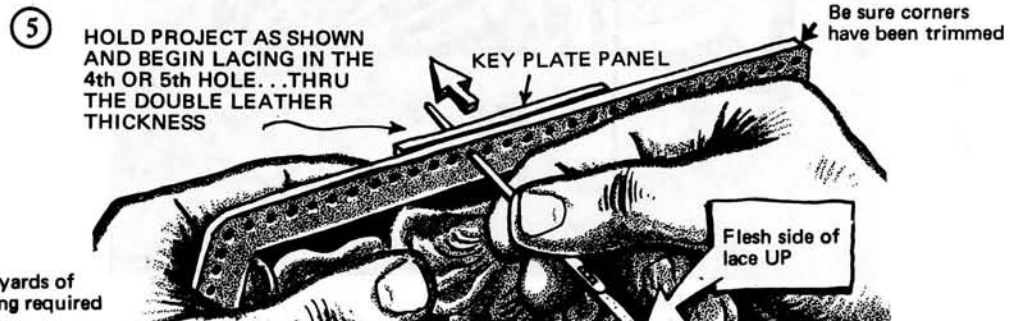


To properly position the key plate panel, count over 12 holes from the end and make a mark with a scribe. Continue counting 10 more holes (the number in the panel) and make another mark.

Apply rubber cement to the flesh sides of the key plate panel and the key case back... at the edges only, as indicated by the shaded areas on the drawings above. Allow the rubber cement to dry (only a few seconds).



Turn key plate panel over (key plate at top), and carefully position the first hole over the twelfth hole in the key case back. Be sure the holes are aligned. Pull loose and replace if necessary.



Hold the project as shown and begin lacing in the fourth or fifth hole, through the double leather thickness. Continue around key case back. Finish the lacing according to the lacing instructions in Chapter 6.

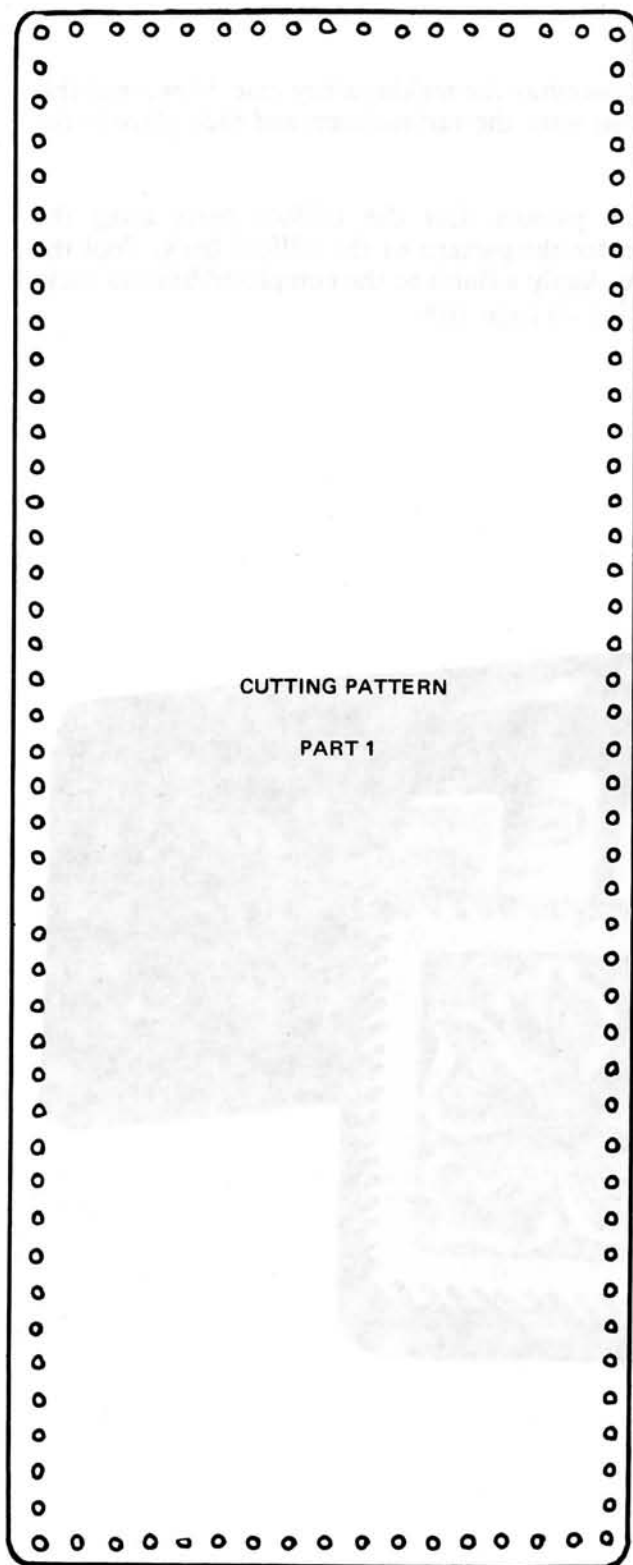
THE BILLFOLD

Before starting a second project, review the procedure for making a key case. Now, read this section on the billfold so that you will be familiar with the various parts and their place in the assembling process.

Prepare the cutting template and transfer pattern. Cut the billfold parts using the recommended weight and type of leather. Transfer the pattern to the billfold back. Tool the billfold back, using the Photo Pattern as a guide. Apply a finish to the completed billfold back. Assemble the billfold using the procedure beginning on page 109.

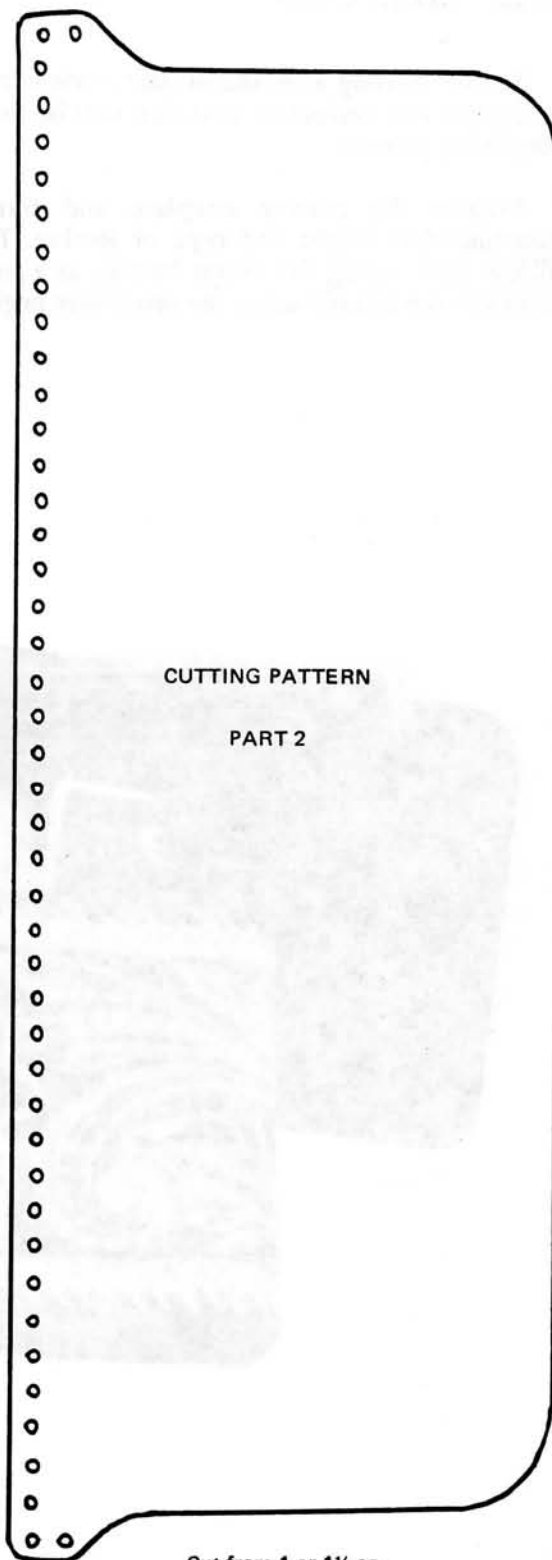


BILLFOLD BACK PATTERN



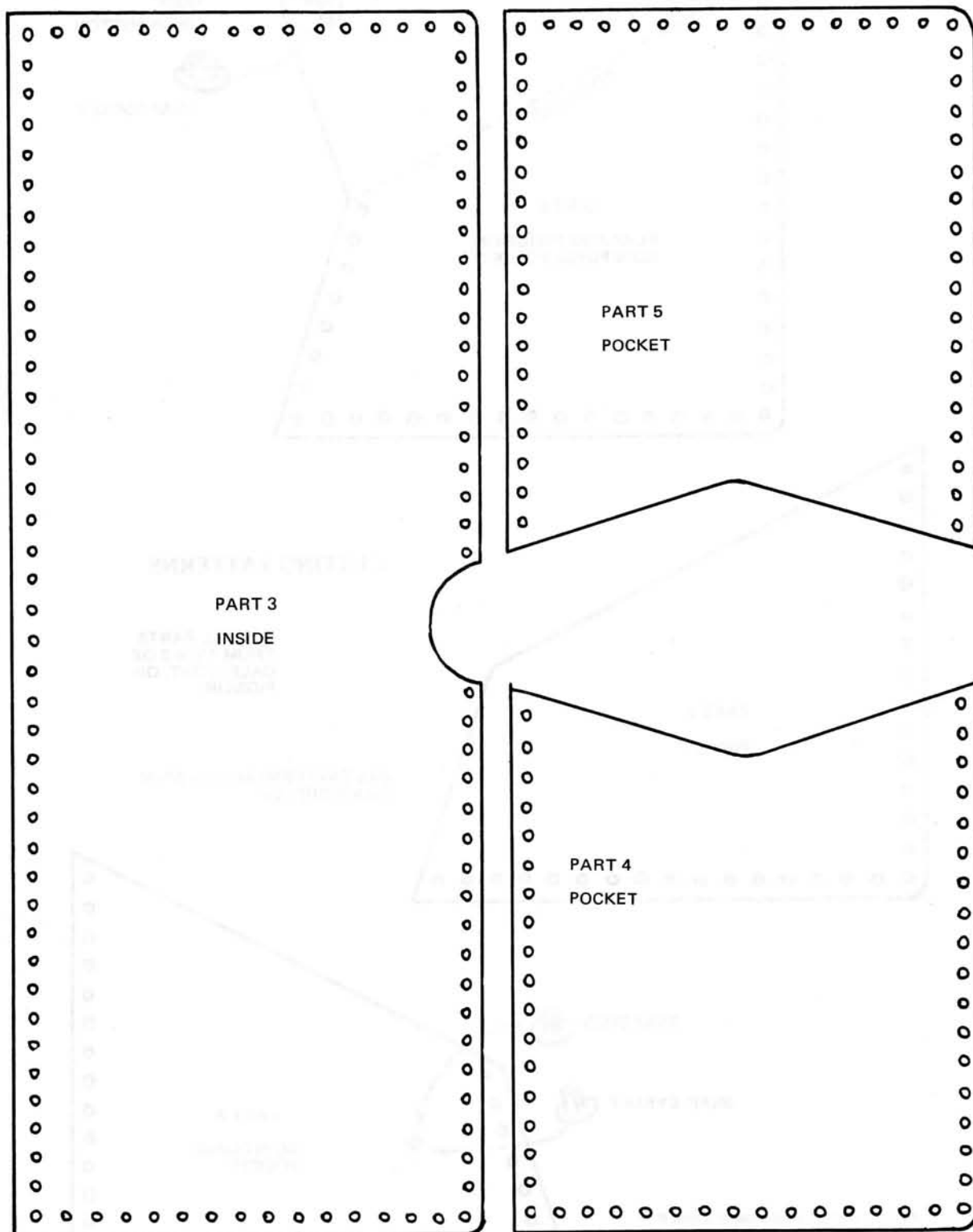
Cut from 2½ oz. to 3½ oz. calf

SECRET MONEY COMPARTMENT

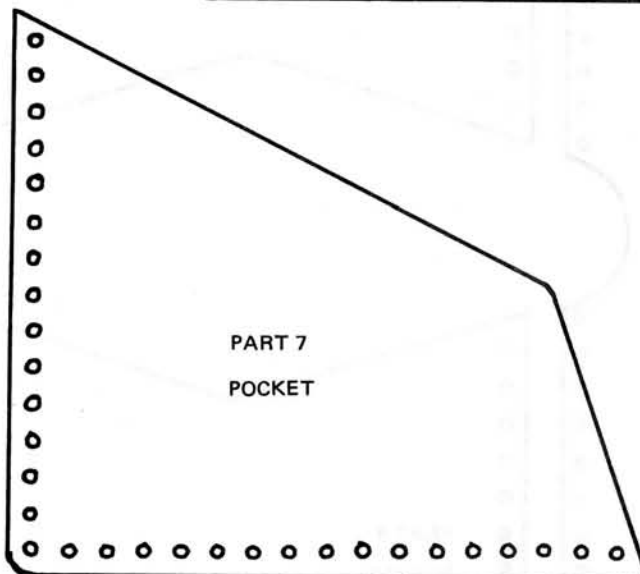
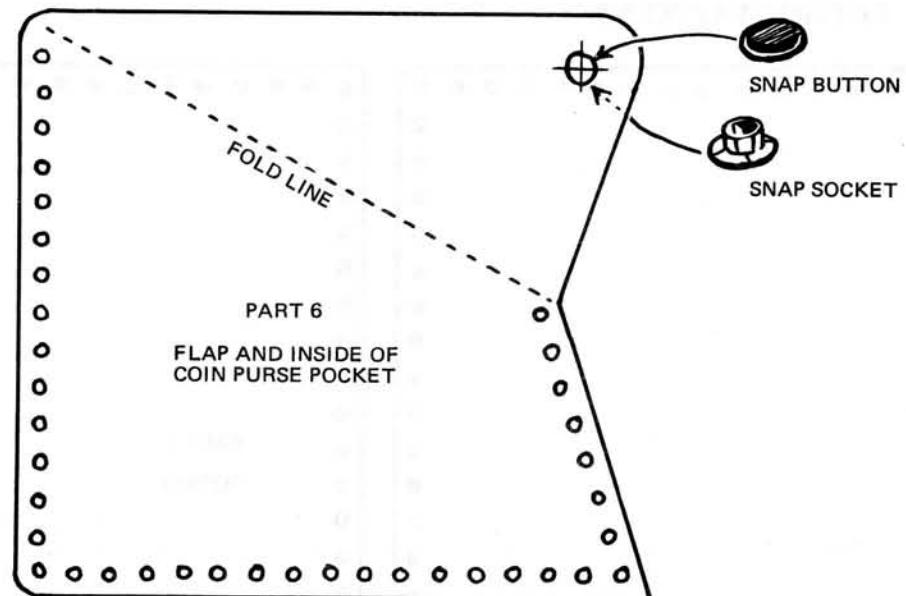


Cut from 1 or 1½ oz.
skiver or similar
lightweight leather

CUTTING PATTERNS:



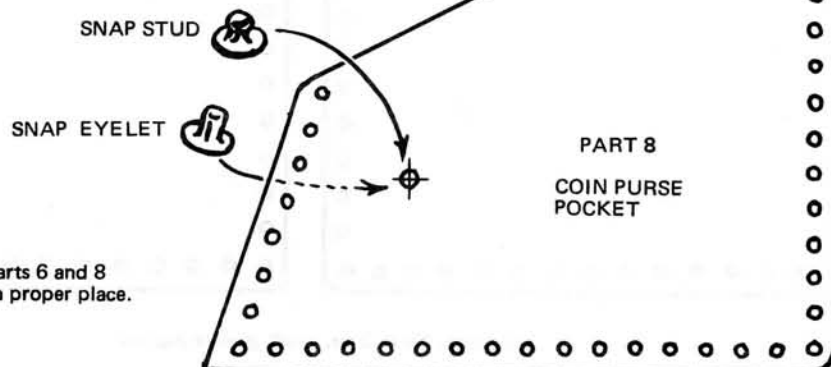
Cut from 1½ or 2 oz. calf, goat or pigskin



CUTTING PATTERNS

CUT ALL PARTS
FROM 1½ to 2 OZ.
CALF, GOAT, OR
PIGSKIN

ALL PATTERNS SHOWN WITH
GRAIN SIDE UP



NOTE: After cutting parts 6 and 8
attach snaps in proper place.

PART 1
BILLFOLD BACK TRANSFER PATTERN

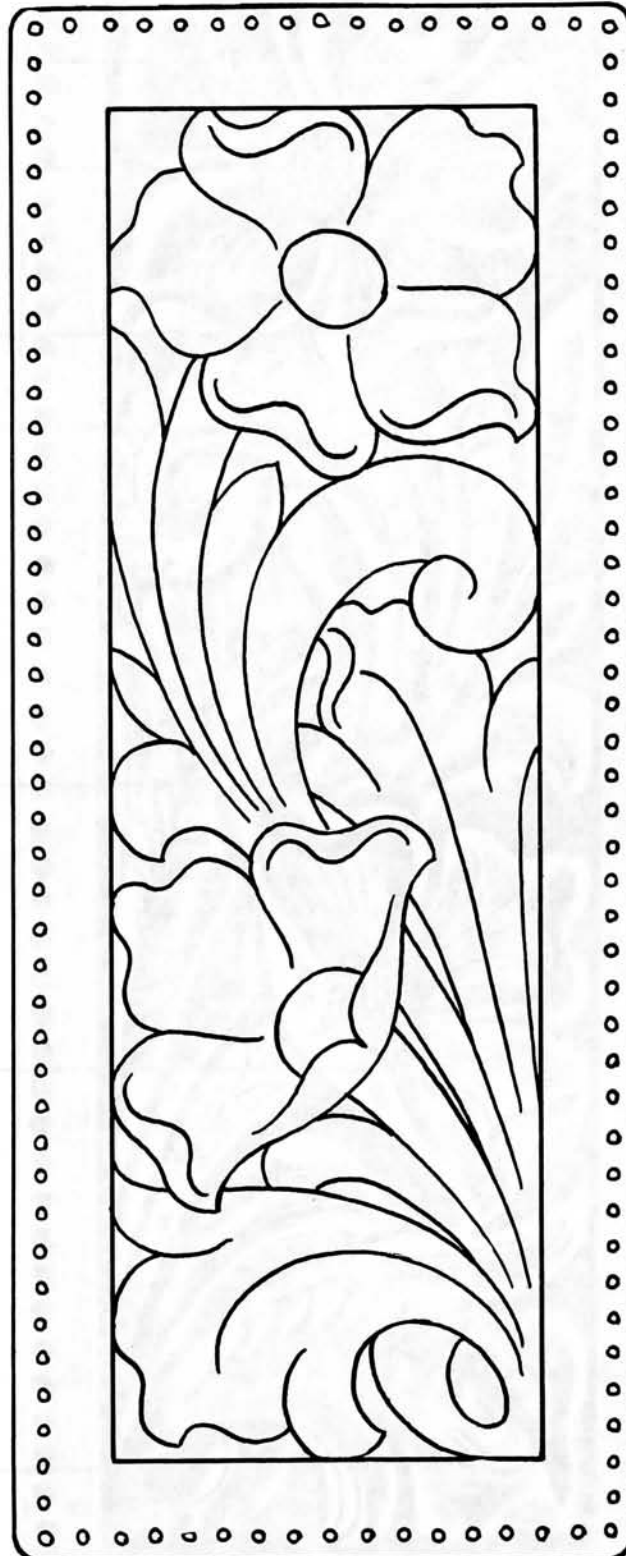
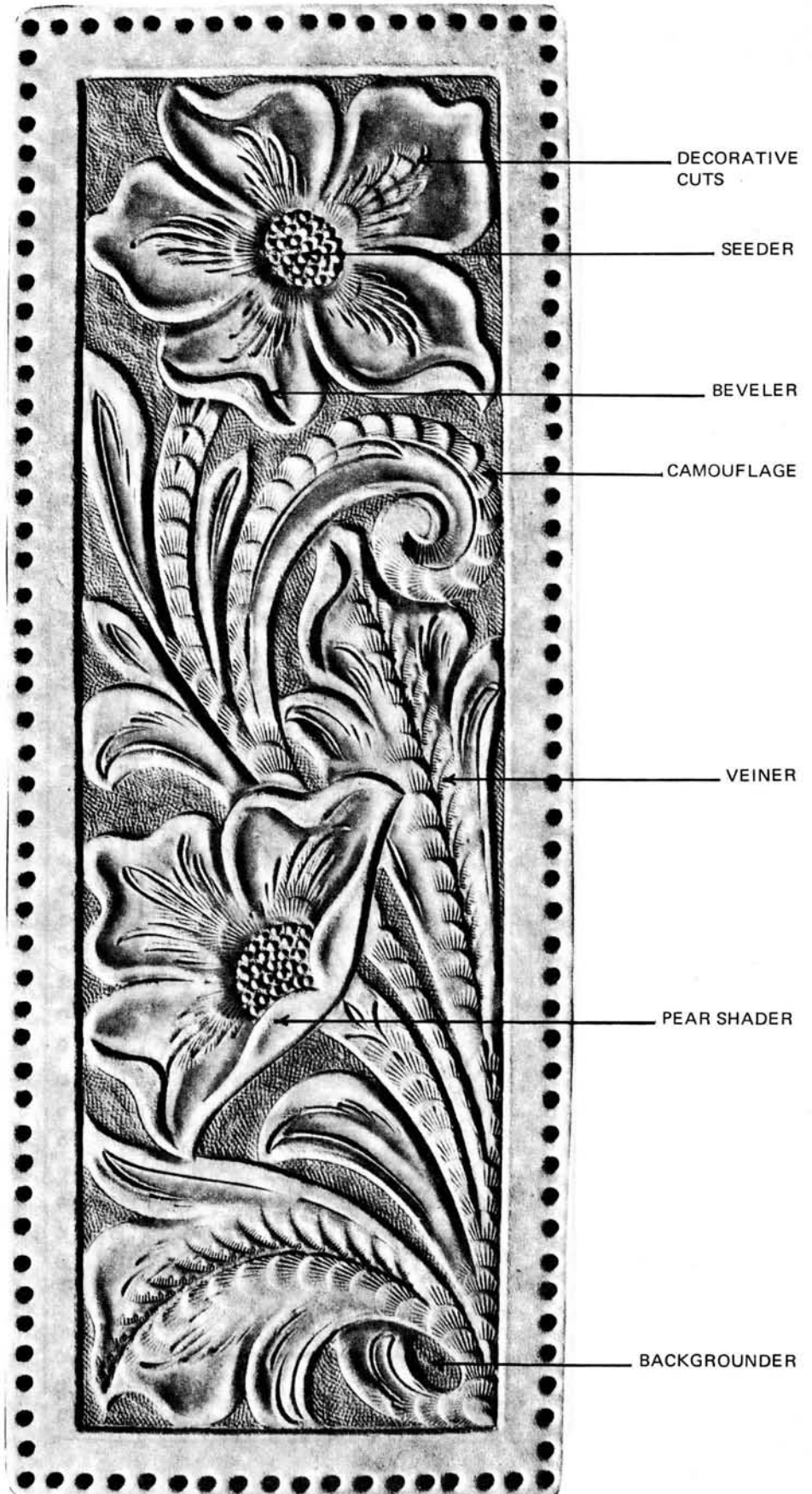
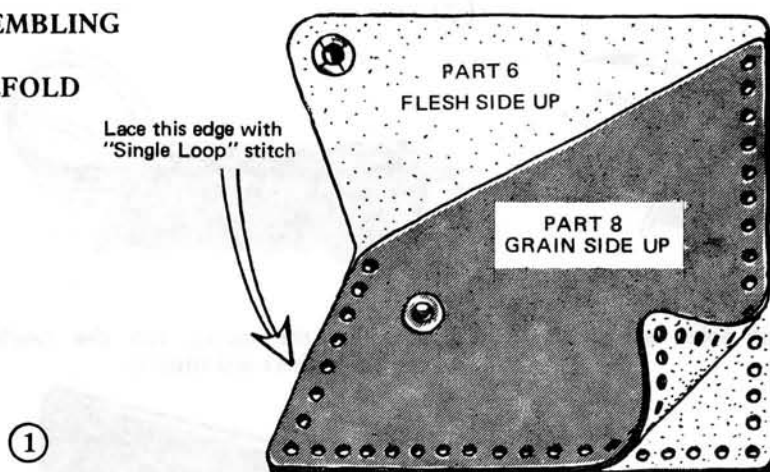


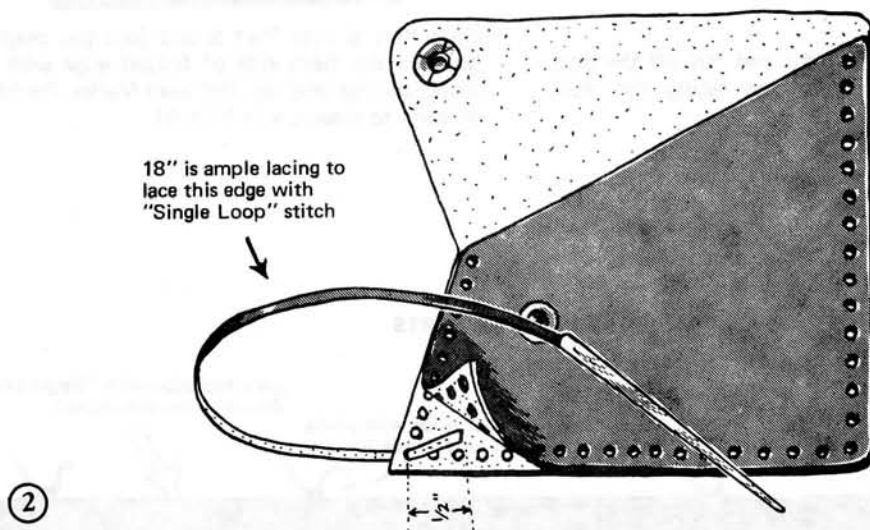
PHOTO
PATTERN



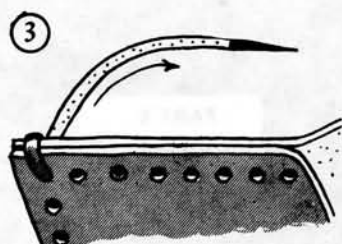
ASSEMBLING THE BILLFOLD



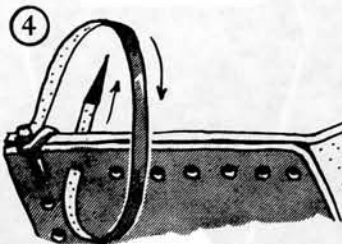
The first step in assembling this billfold is to lace the front edge of the coin purse (parts 6 and 8). Lay Part 6 flesh side up and place Part 8 in position, as shown. Be sure the holes are aligned. Prepare a length of lacing and attach to the needle.



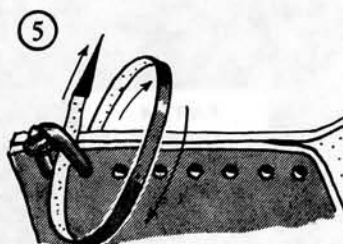
Begin lacing as shown above. Allow about $\frac{1}{2}$ " of lacing between the leathers.



Hold leathers together to prevent end from slipping and lace through first hole of both leathers.

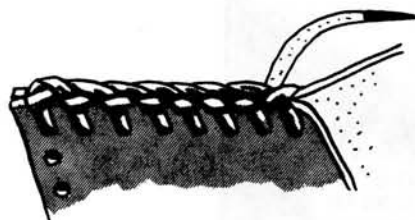


Go under the lace and through the next hole. Do not allow the lacing to twist.



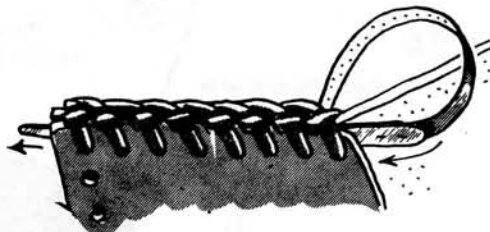
Pull the lace tight...lace under the stitch and continue lacing the Single Loop stitch.

⑥



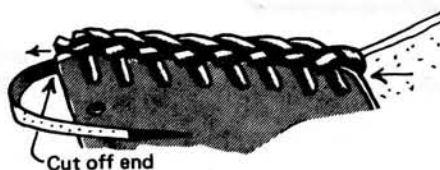
Lace the edge, through all holes, and under the stitch as shown.

⑦



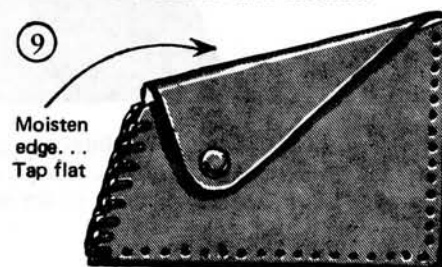
To complete the lacing, run the needle between the leathers and stitches.

⑧



Pull the lacing up tight and cut off the end, between the leathers. Tap lacing flat with mallet.

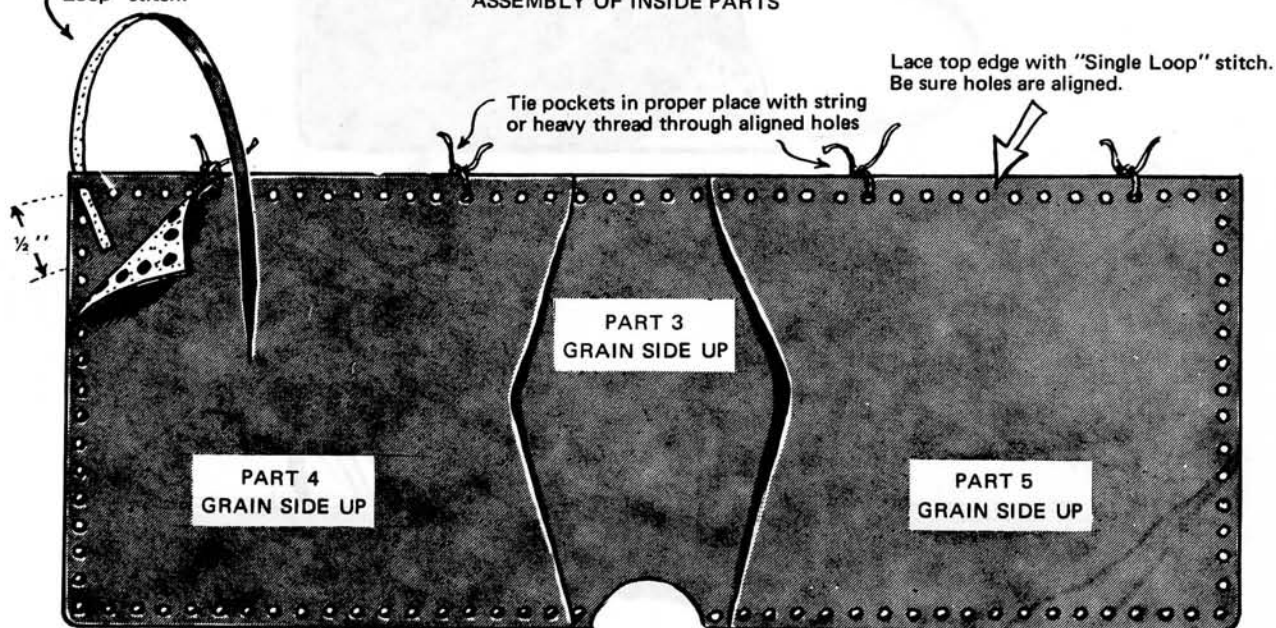
⑨



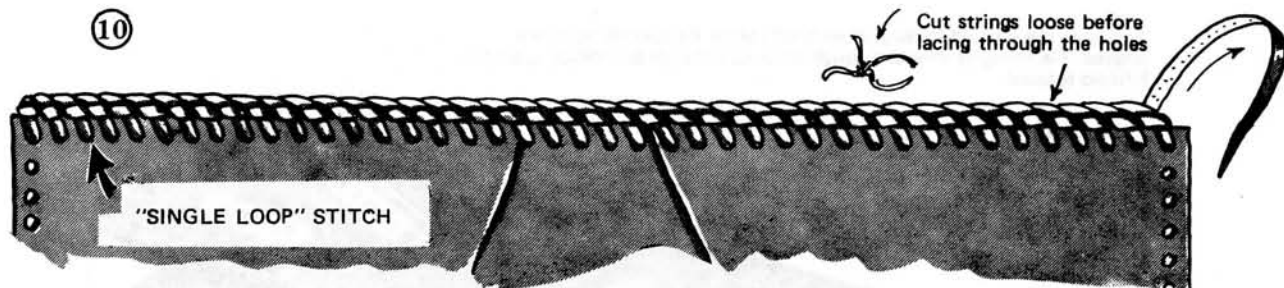
Fold Part 6 over Part 8 and join the snaps. Moisten the flesh side of folded edge with a damp sponge and tap flat with Mallet. Pocket is ready to assemble in billfold.

1 1/3 yards of lacing required to lace top edge for "Single Loop" stitch.

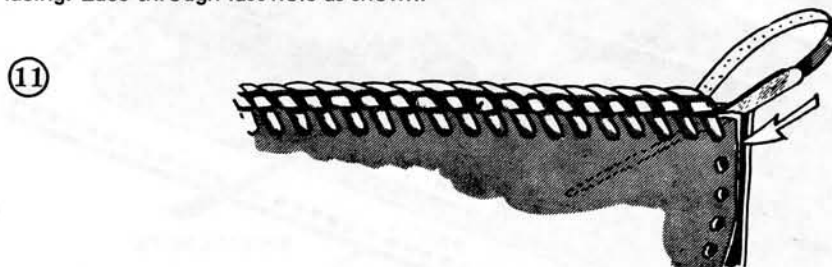
ASSEMBLY OF INSIDE PARTS



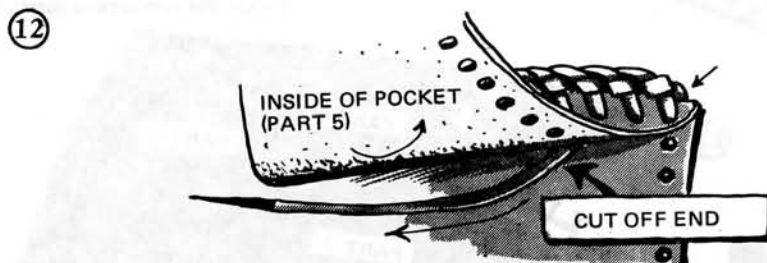
Pockets (Parts 4 and 5) are next laced to Part 3. Begin the lacing exactly as with the coin purse. Align holes; tie with string to keep pockets in position.



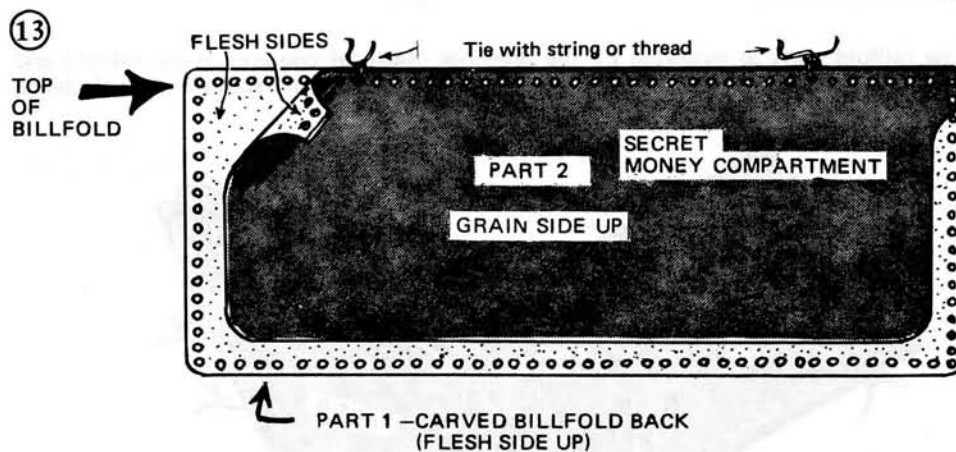
Lace the edge with the SINGLE LOOP stitch. Lace up to string; cut string and remove. Continue lacing. Lace through last hole as shown.



To lock end, push needle down between leathers and between the stitches.

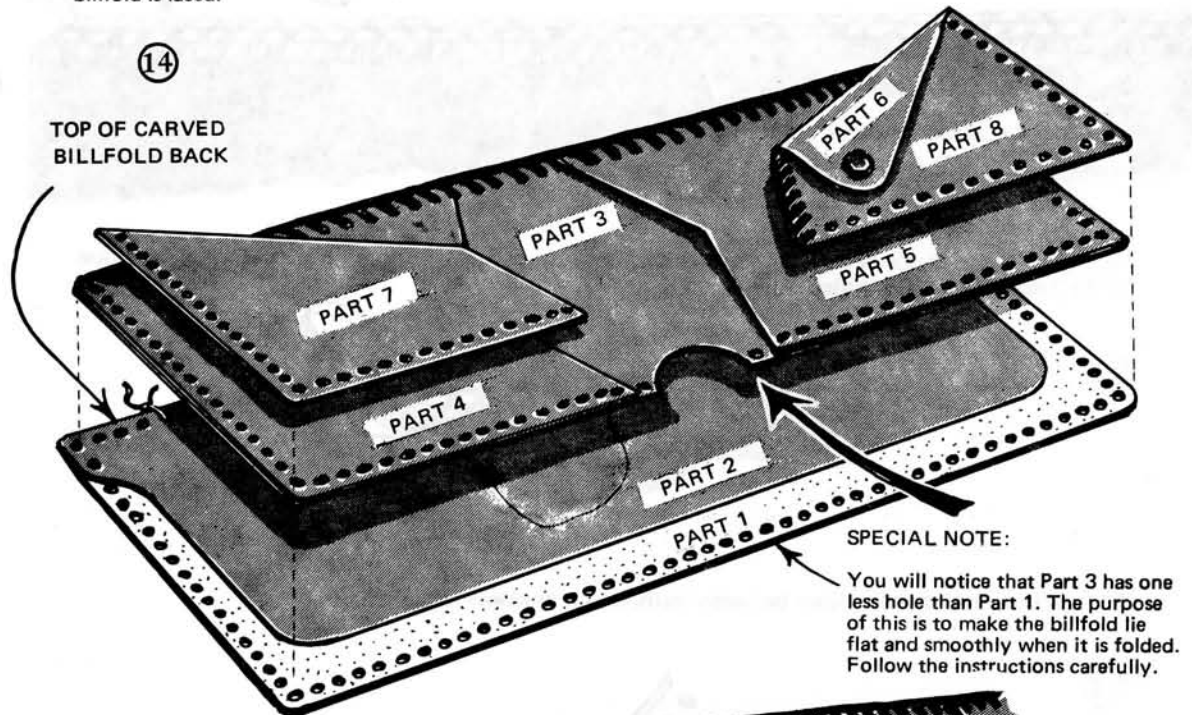


Pull lace tight; cut off end inside pocket.

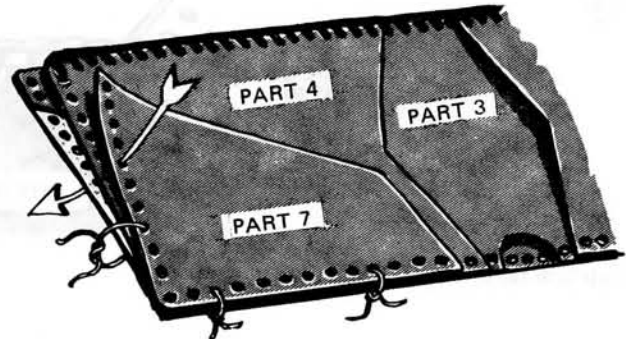
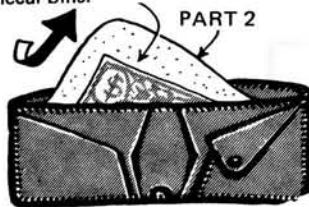


Part 2 laces to the TOP EDGE of the carved billfold back. Carefully align the holes and tie Part 2 in position with string as shown. Parts are ready for assembly.

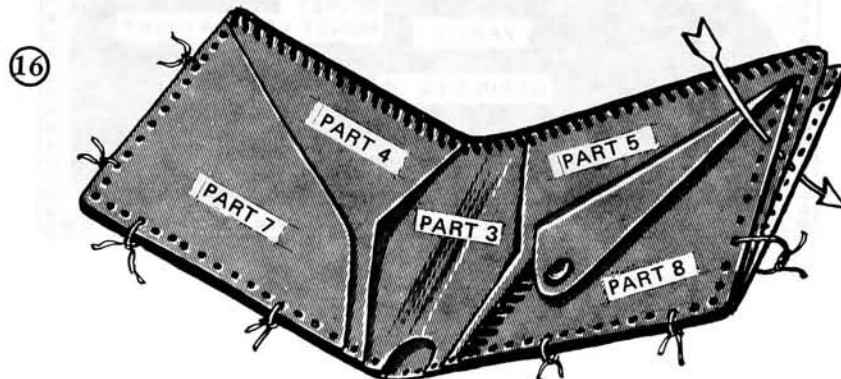
Assemble the billfold parts as illustrated below. Be sure all holes are aligned. Tie string or thread through holes to hold parts in place, until the billfold is laced.



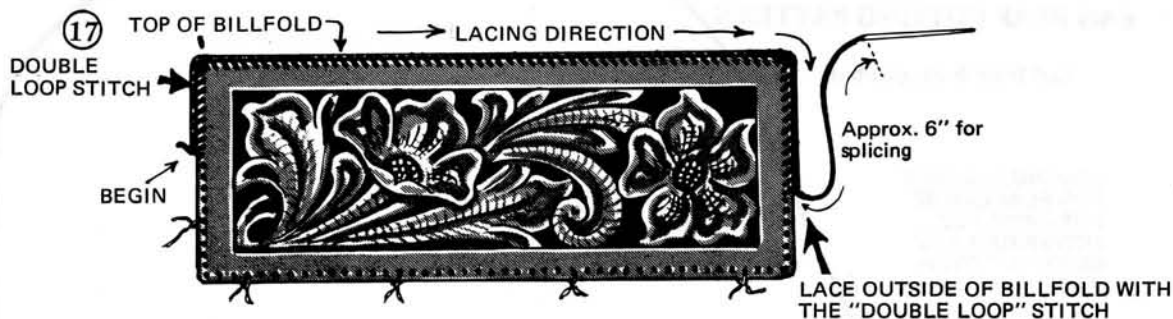
When completed secret money compartment (Part 2) lifts up to conceal bills.



Assemble the billfold parts as indicated by the drawings. Begin at one end of the billfold and carefully align the holes of each part as you put them in place. Use the stylus end of Modeling tool, if necessary. Tie the parts with thread, as shown.



To properly align the hole of the oppsite end, the billfold is turned up as shown as Part 3 has one less hole than Part 1. Carefully align the holes of each part (count them, if necessary) and tie them together as with the opposite end. The billfold is ready to lace.



The top edge of the billfold is usually laced first, with a sufficient length of lacing to finish the top edge and or/half way around the article without having to splice. This article requires only 2½ yds. of lacing to go half the distance. Follow instructions carefully.

THE HANDBAG

A good leather for this handbag is 6 oz. cowhide. Cut each part carefully from the template you prepare from the patterns on the following pages. The cutting patterns for the main bag body and lining are too large for one page, therefore they are divided on three pages. Place the three sections together at the indicated places to make the cutting pattern template.



If the handbag is to be lined, the lining parts are cut slightly larger than the patterns for the outside parts of the handbag, although the same template is used. 1 oz. skiver or 1½ oz. goat are suitable for lining.

Read through the entire handbag cutting and assembling directions to familiarize yourself with the procedure.

BAG FLAP CUTTING PATTERN

Cut from 6 oz. cowhide

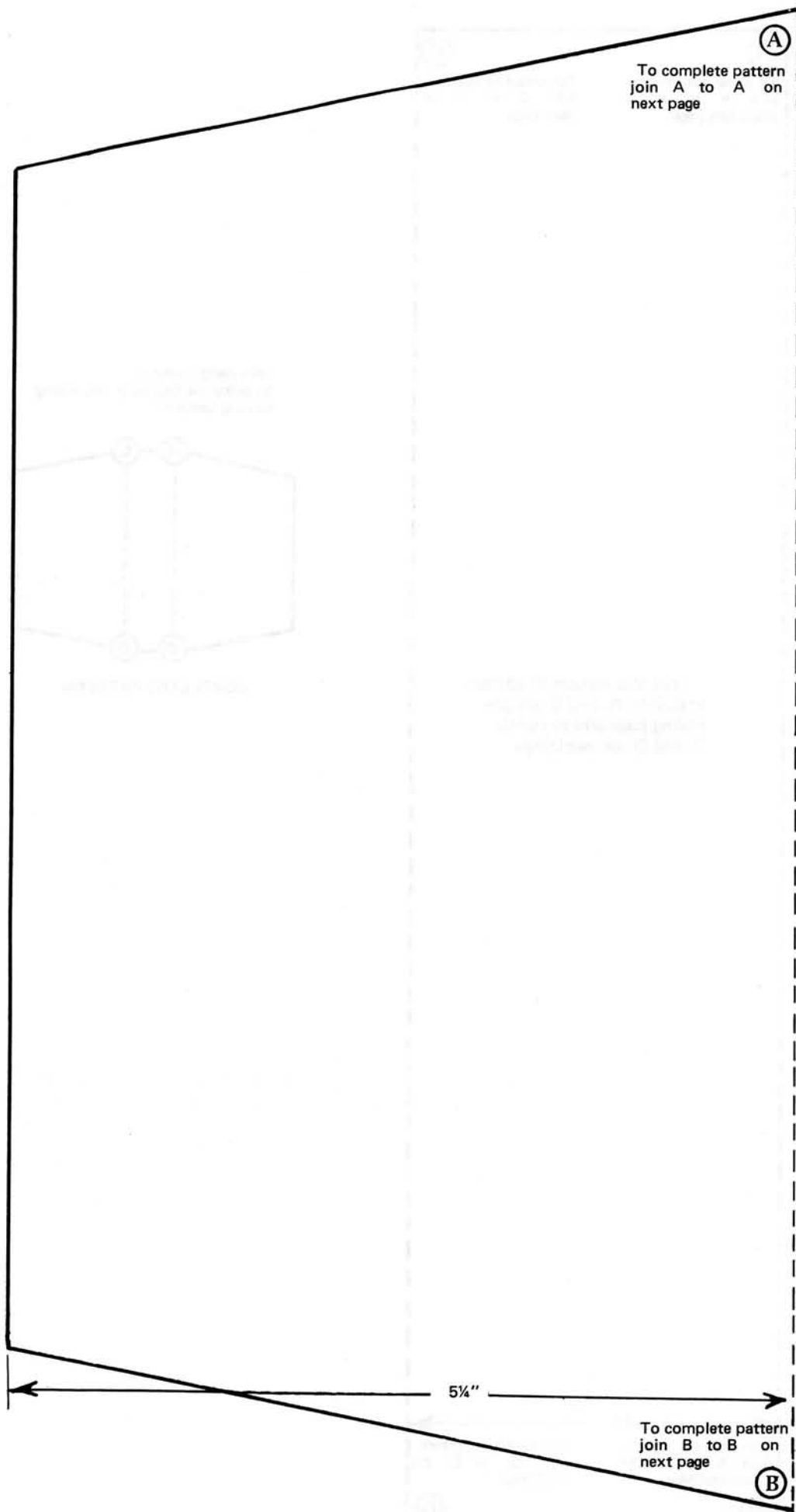
LINING LEATHER
FOR FLAP CAN BE
CUT FROM 1 OZ.
SKIVER OR 1 1/4 OZ.
GOAT. CUT OVER-
SIZE.

NOTE:
If handbag is to be lined,
cut lining by this pattern.

Cut slightly larger.

**CUTTING
PATTERN
FOR
BAG**

LEATHER
LINING CAN
BE CUT FROM
THIS PATTERN.
IT SHOULD BE
CUT SLIGHTLY
OVERSIZE.



To complete pattern
join A to A on
next page

To complete pattern
join B to B on
next page

(A)

To complete pattern
join A to A on
preceding page

(C)

To complete pattern
join C to C on
next page

Join this section of pattern
at points A and B on pre-
ceding page and to points
C and D on next page

2 1/2"

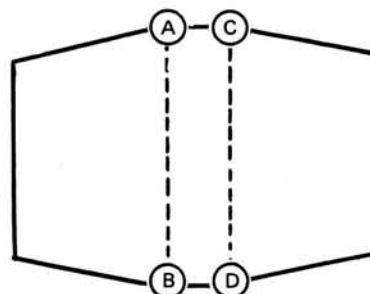
To complete pattern
join B to B on
preceding page

To complete pattern
join D to D on
next page

(B)

(D)

Join parts together
to comprise bag back and lining
cutting pattern.

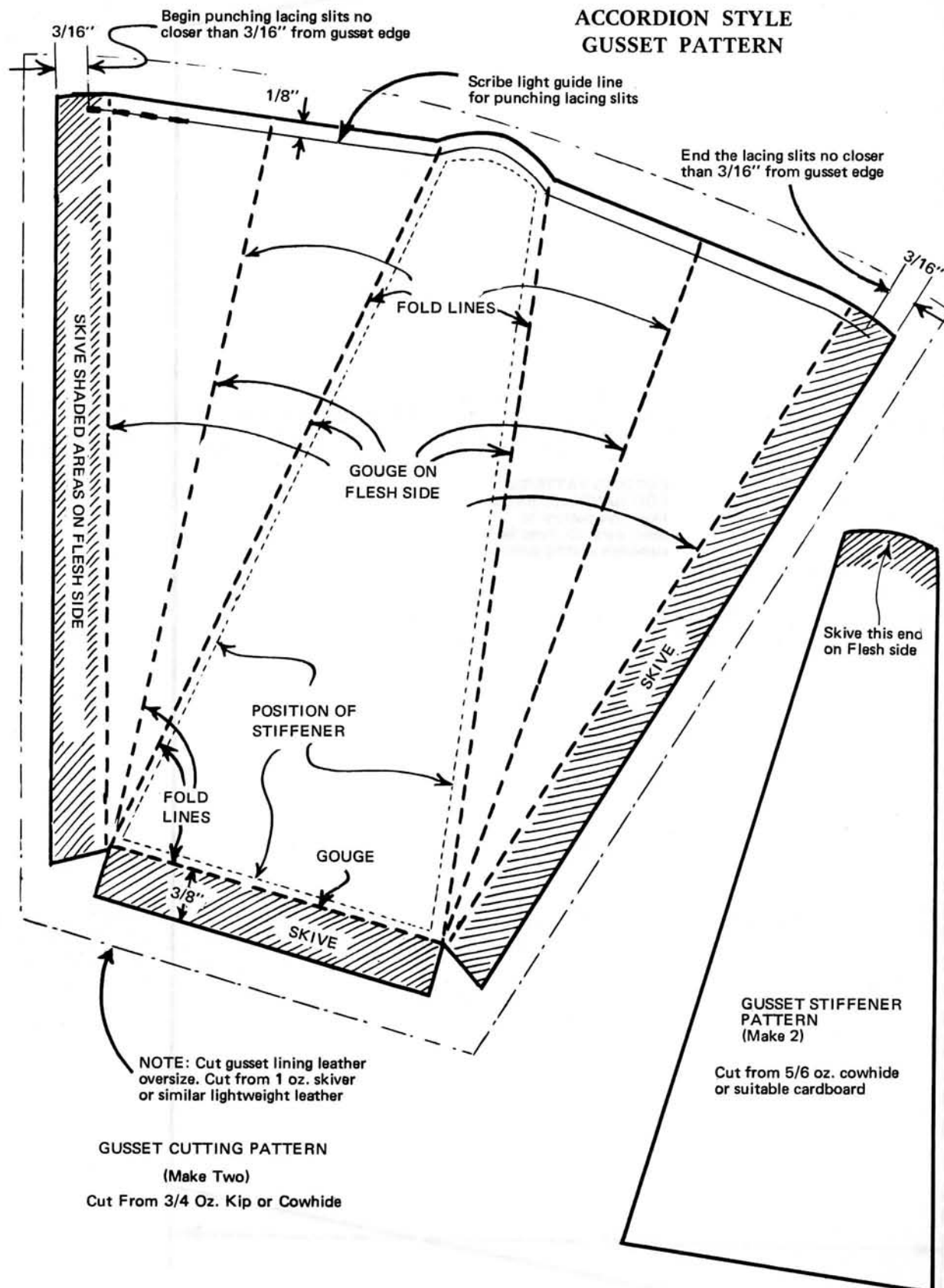


COMPLETED PATTERN



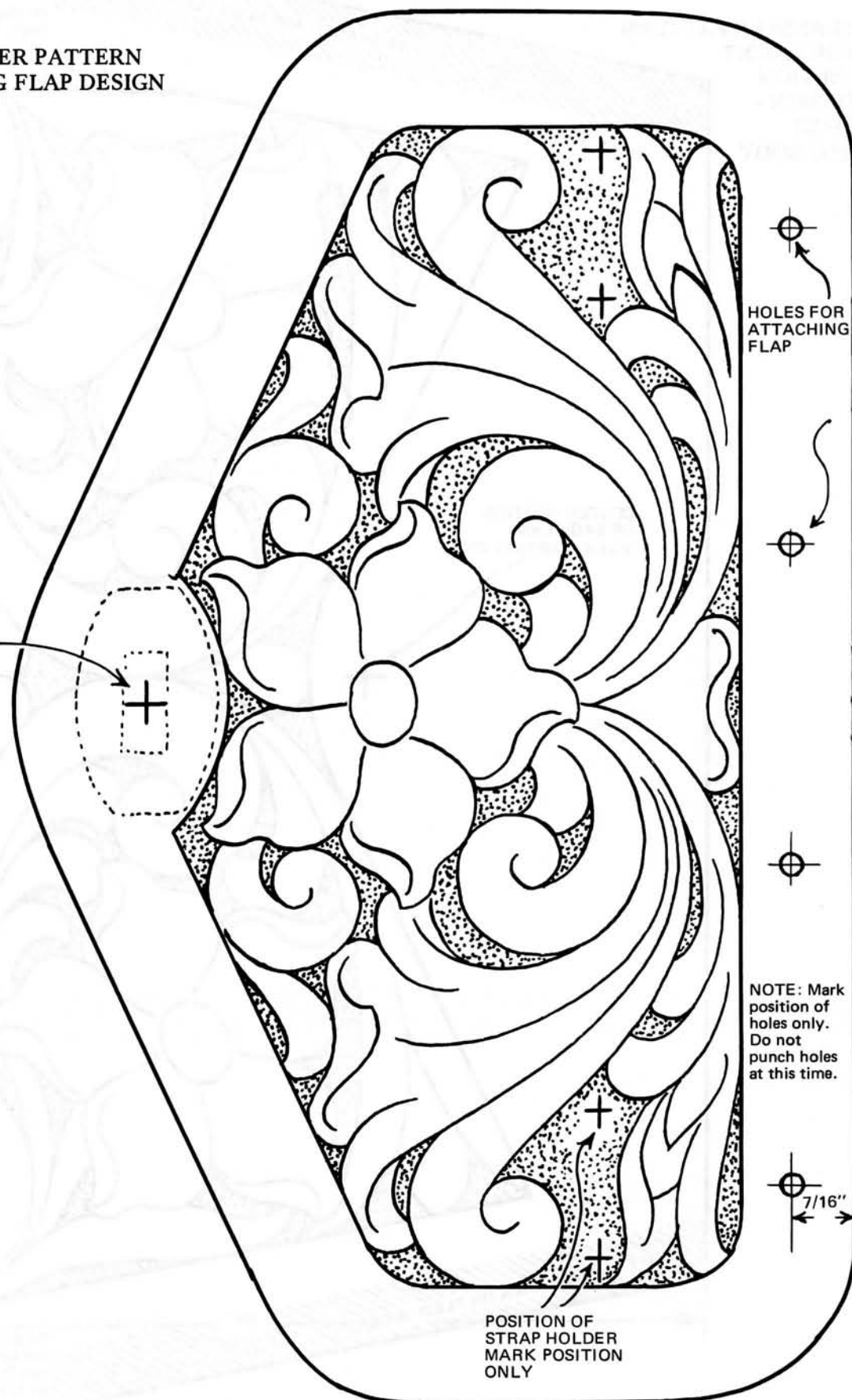
CUTTING PATTERN
FOR HANDBAG BACK
(Join this pattern to
other parts to comprise
complete cutting pattern)

5 1/4"

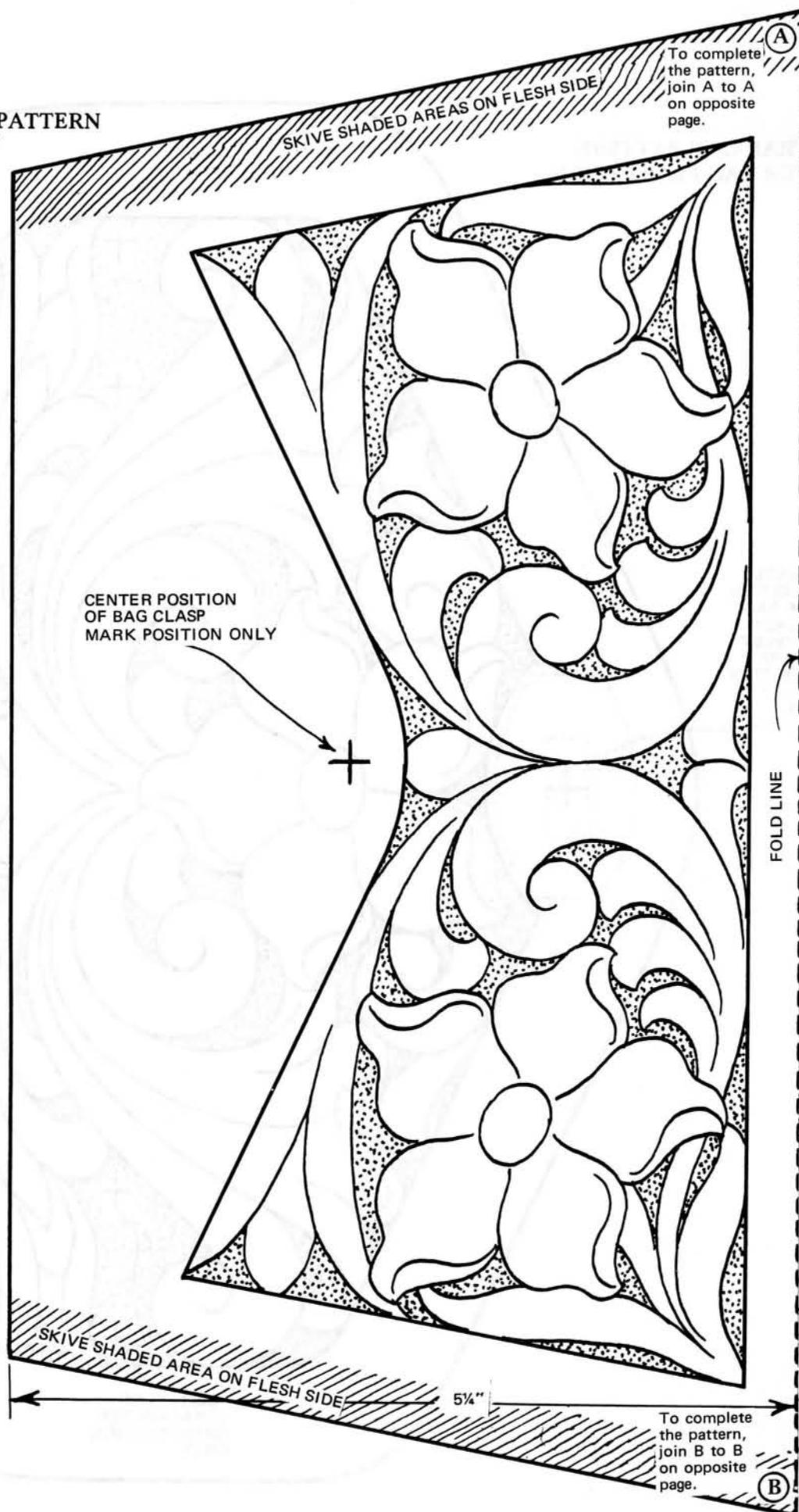


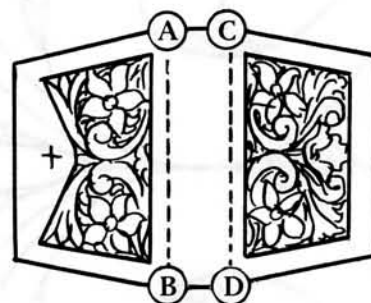
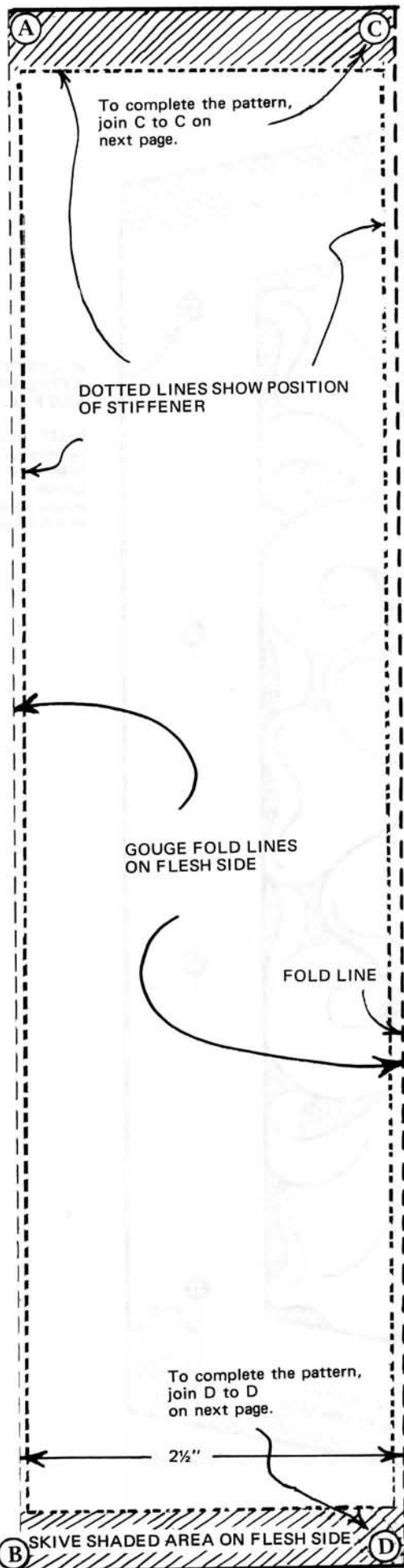
TRANSFER PATTERN
FOR BAG FLAP DESIGN

CENTER
POSITION
OF BAG
CLASP
EYELET
MARK
POSITION
ONLY



TRANSFER PATTERN
FOR FRONT
SECTION
DESIGN -
MAIN
BAG BODY





COMPLETED PATTERN

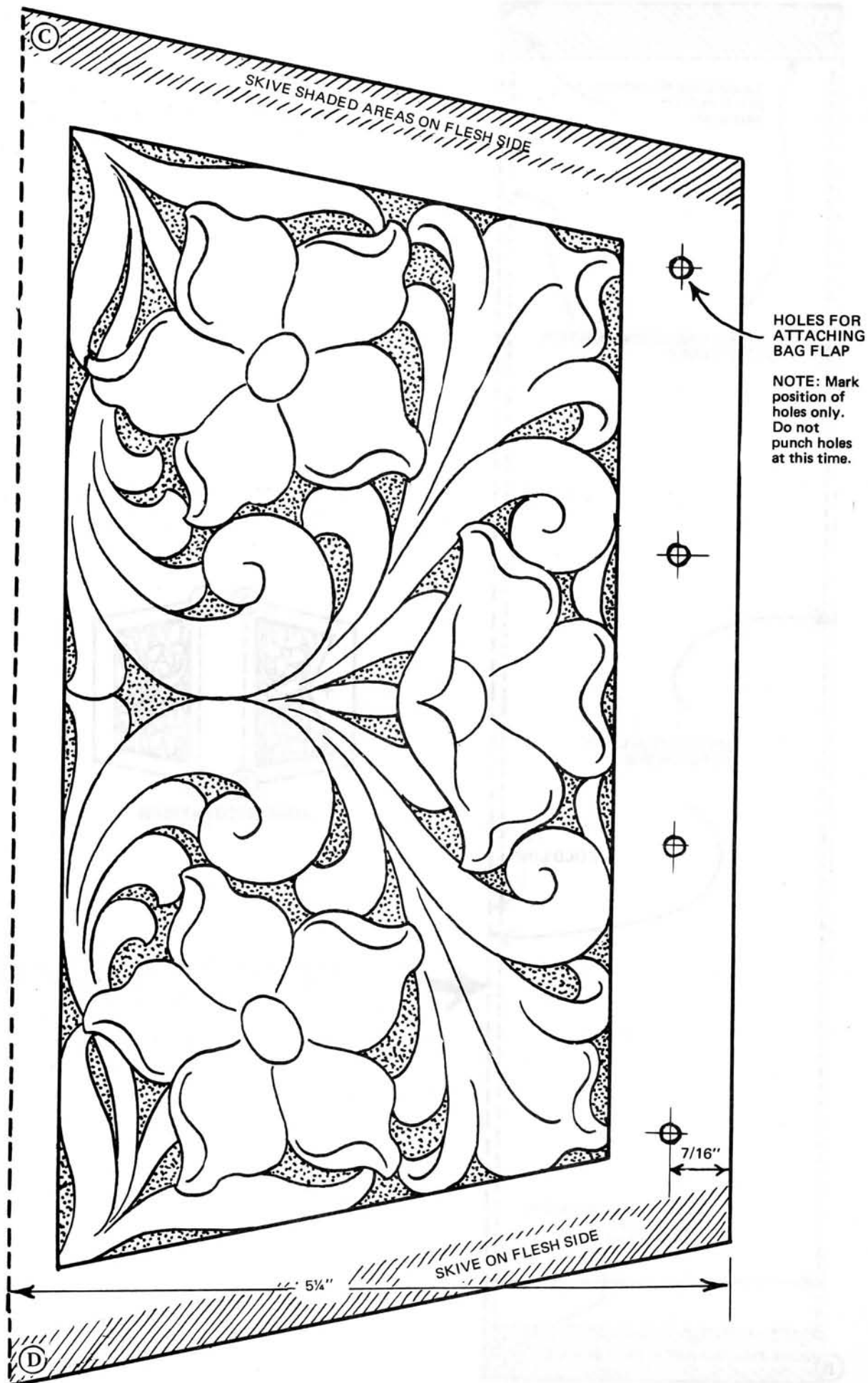


PHOTO CARVE PATTERN
FOR BAG FLAP

DECORATIVE CUTS

BEVELER

CAMOUFLAGE

SEEDER

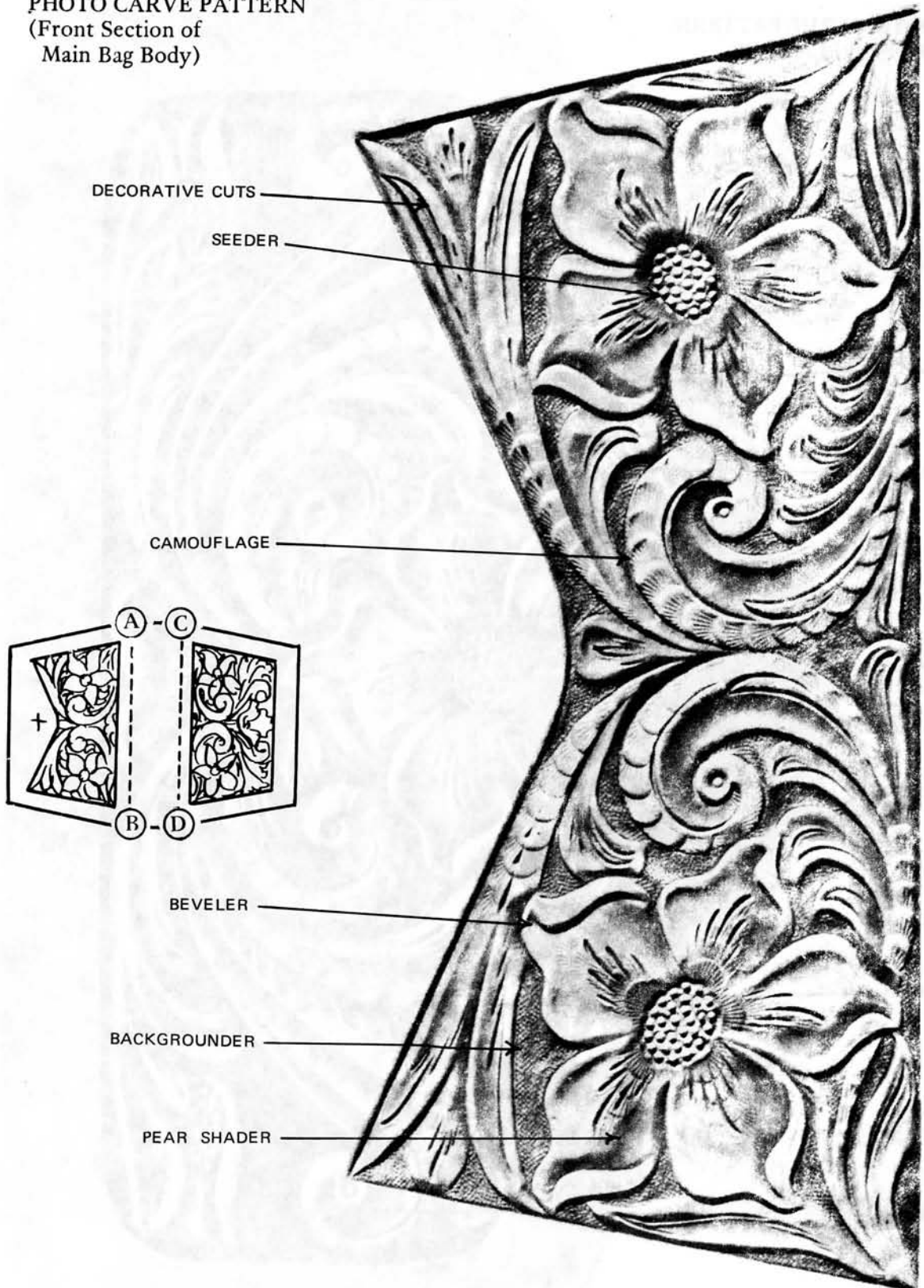
PEAR SHADE

VEINER

BACKGROUND



PHOTO CARVE PATTERN
(Front Section of
Main Bag Body)



©

PHOTO CARVE PATTERN
(Back Section of Main Bag Body)

DECORATIVE CUTS

BEVELER

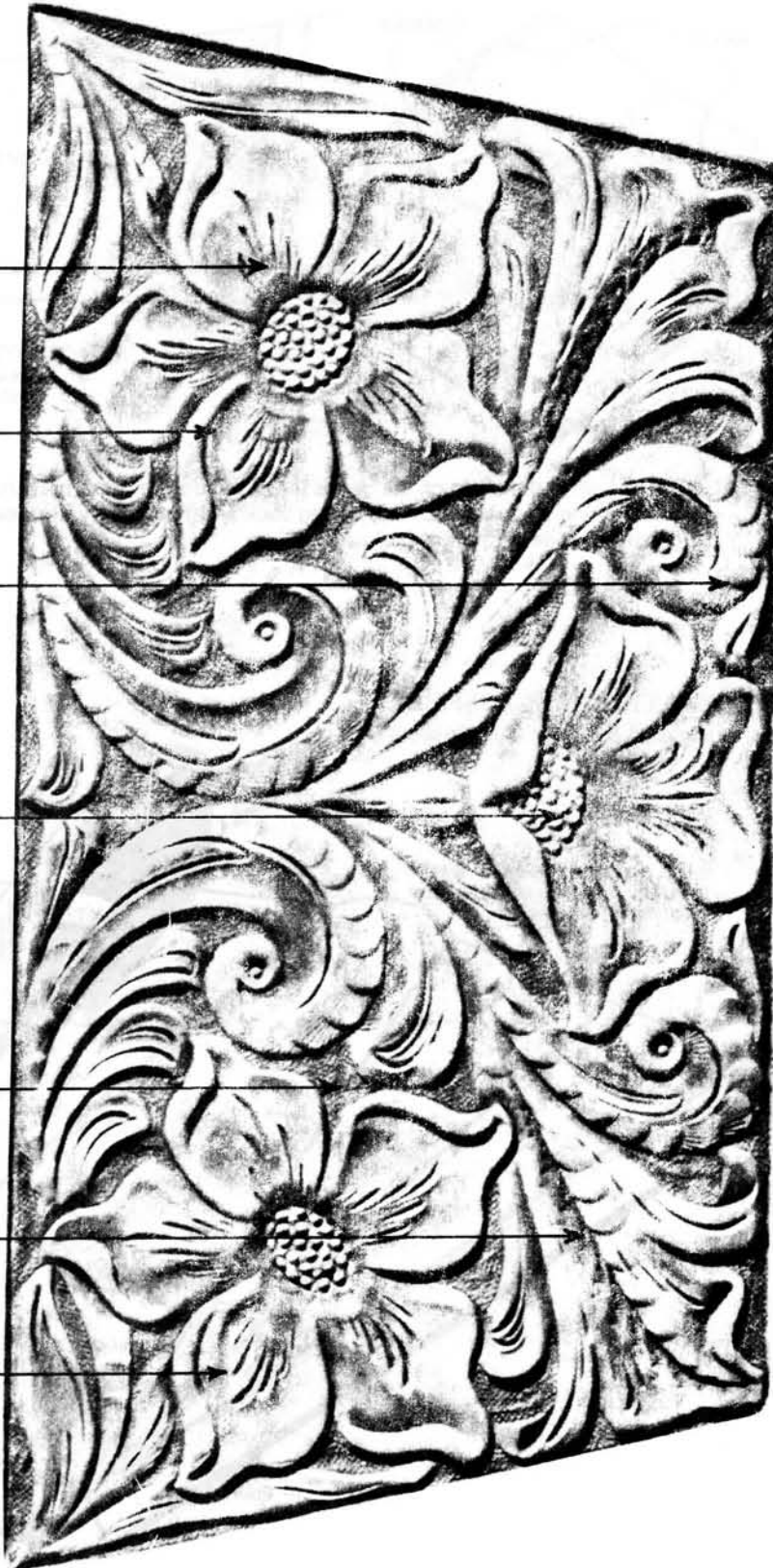
CAMOUFLAGE

SEEDER

BACKGROUNDER

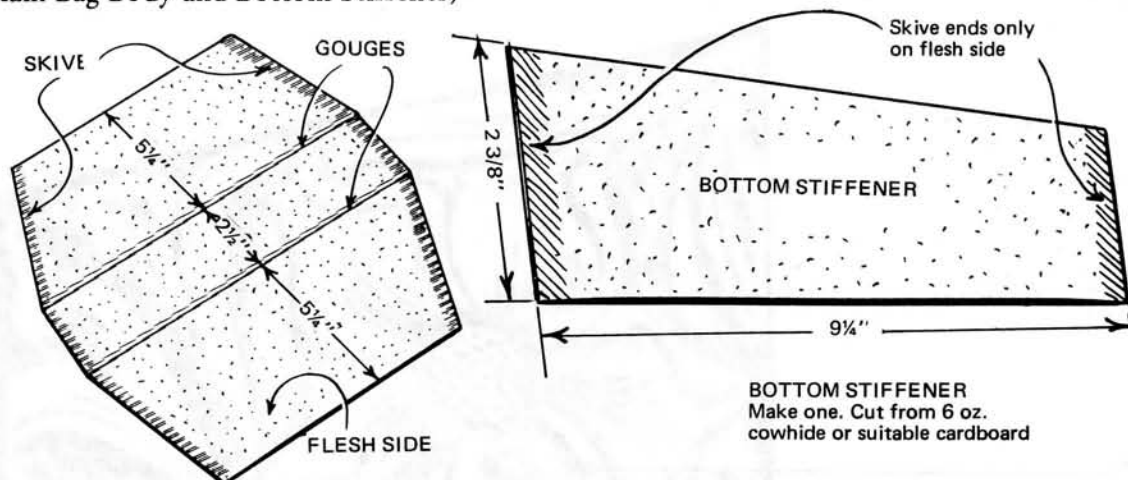
VEINER

PEAR SHADER



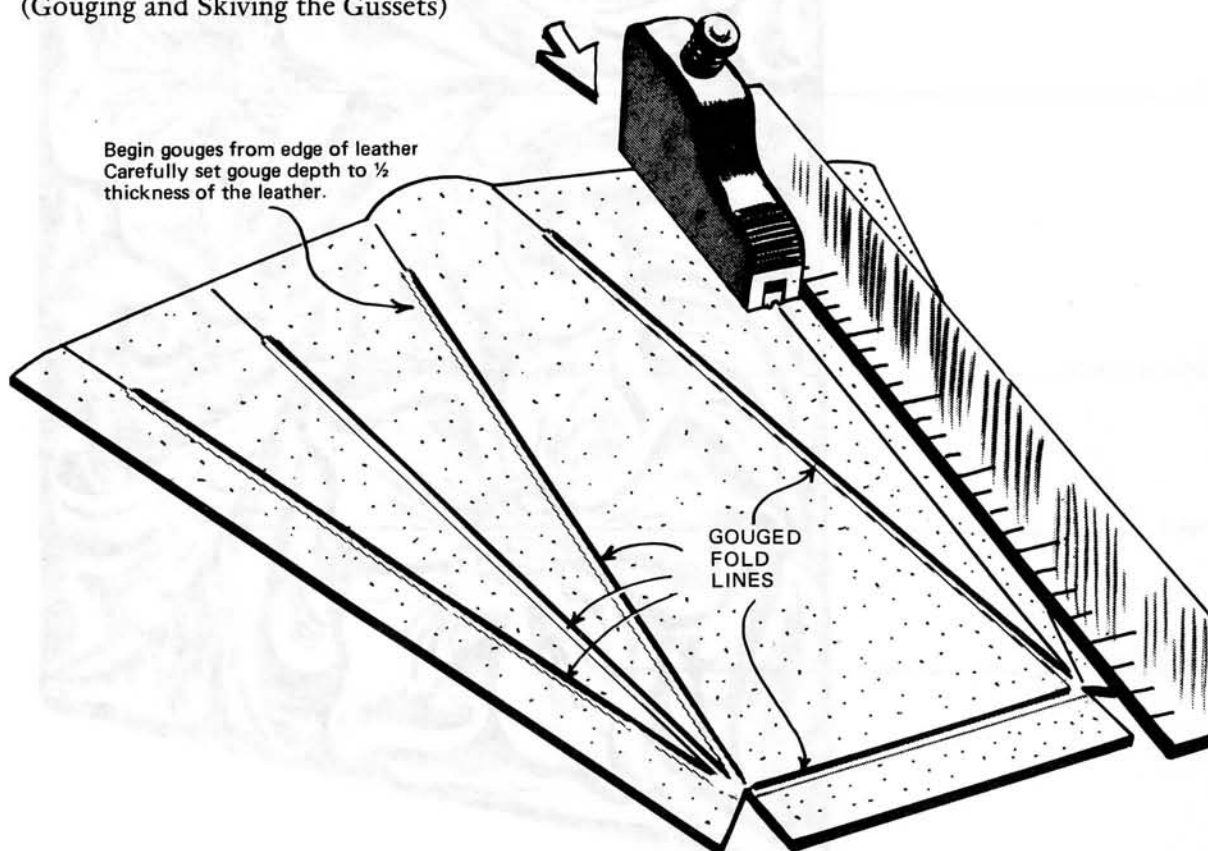
©

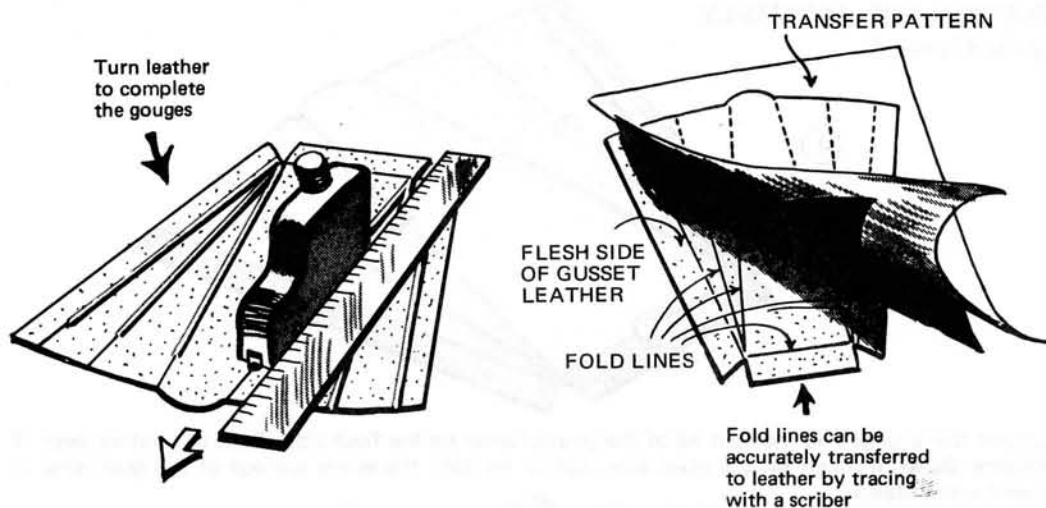
PREPARATION FOR ASSEMBLY (Main Bag Body and Bottom Stiffener)



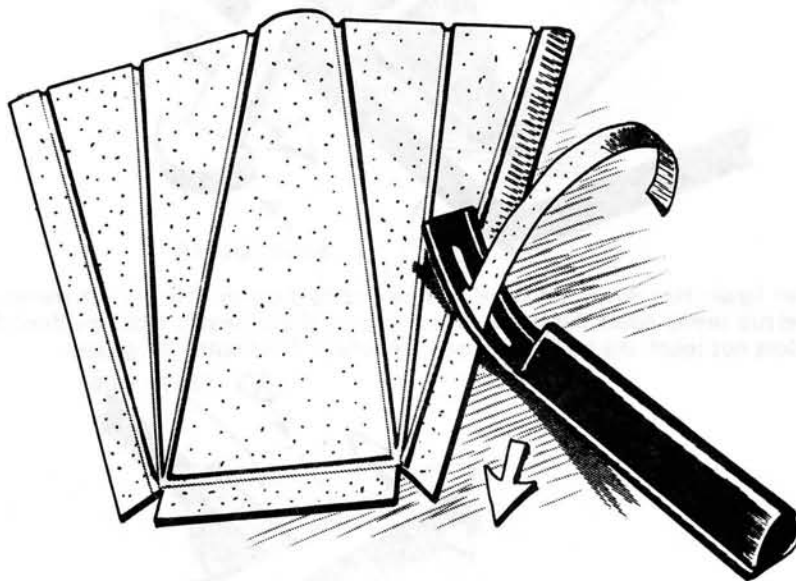
Gouge and skive the body of the bag as indicated on the patterns. When completed apply a coat of leather dressing to outside surface of bag back and flap. This will preserve the beauty of the carved design and outside of the finished bag.

PREPARATION FOR ASSEMBLY (Gouging and Skiving the Gussets)





When gouging the lightweight gusset leathers, the lines must be absolutely straight and the proper depth. Gouge deep enough to make the fold easily, but not deep enough to gouge through or show on the outside. It is best to experiment on a scrap of similar weight leather to adjust the gouge to proper cutting depth before using the tool on the article. Hold the rule (gouging guide) firmly on the leather so that it does not slip.

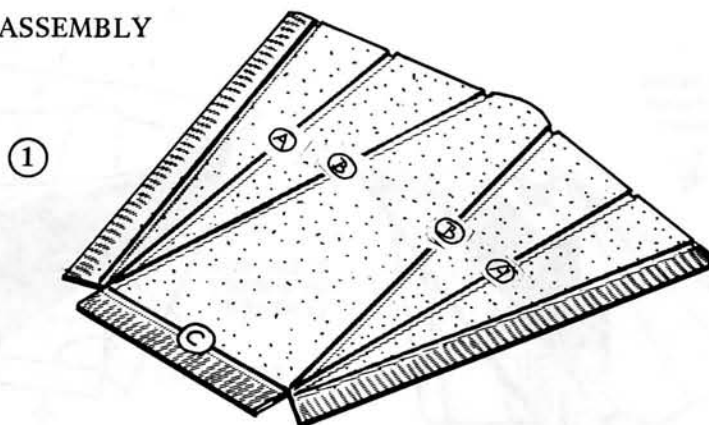


The purpose of skiving the edges of the gussets is to reduce their thickness so that when assembled the edges will not look bulky. Use care when skiving the gusset leathers; skiving away about $\frac{1}{2}$ the thickness. Skive only three edges of the flesh side of the leather.

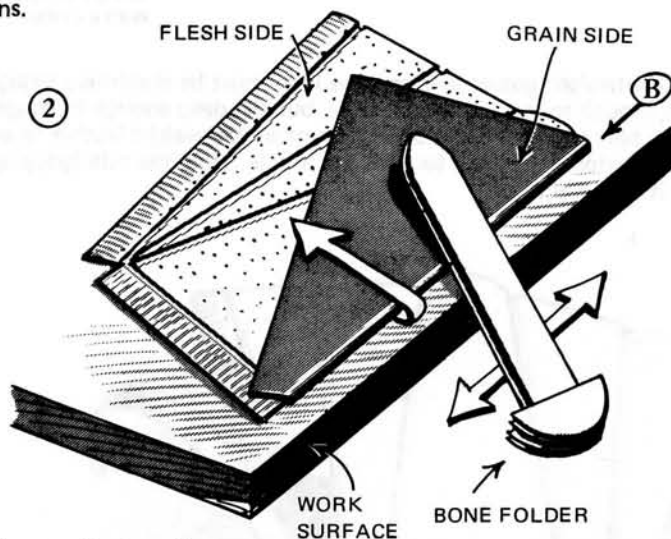
Cut stiffeners to proper size. Skive only the top end as indicated on the pattern. The skived area can taper to more than $\frac{1}{2}$ the thickness. . .almost to a "feather" edge, if desired, at the end of the gusset stiffeners.

SPECIAL NOTE: If difficulty is encountered in using the Skiving Knife, try holding it at different angles. Use the Skiving Knife at the angle most satisfactory to you for most successful results.

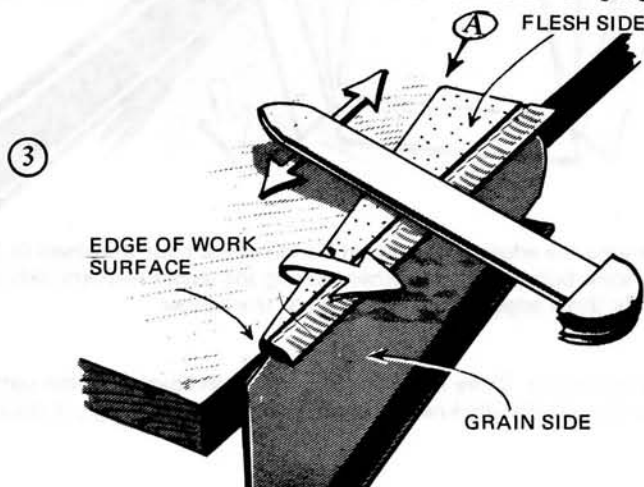
PREPARATION FOR ASSEMBLY (Folding the Gussets)



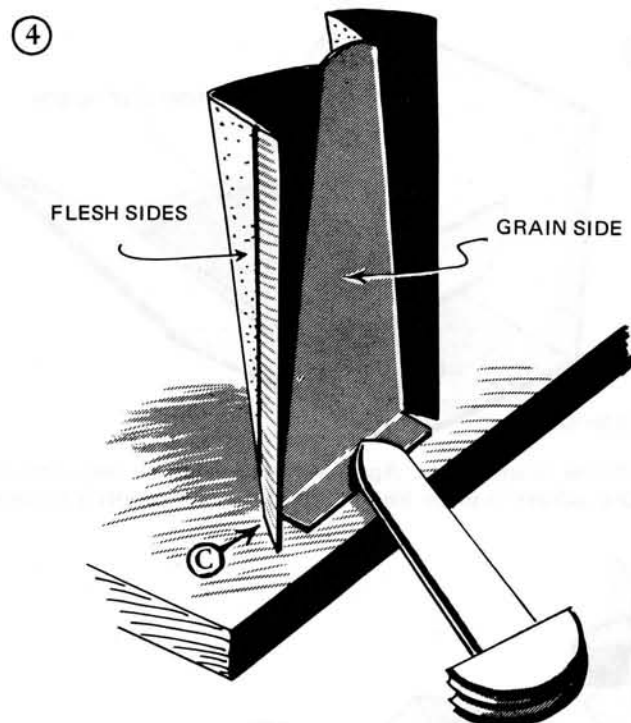
Dampen the sponge and moisten all of the gouged areas on the flesh side. Turn the leather over. If moisture shows through on the grain side, lightly moisten the entire surface of the grain side to prevent water stains.



Place the leather (grain side down) on work surface and fold gouge lines "B" as shown. Use the Bone Folder and rub firmly down the length of the fold for sharp creases. Hold the Bone Folder so that the point does not touch the leather and mar the surface. Fold both "B" gouges.

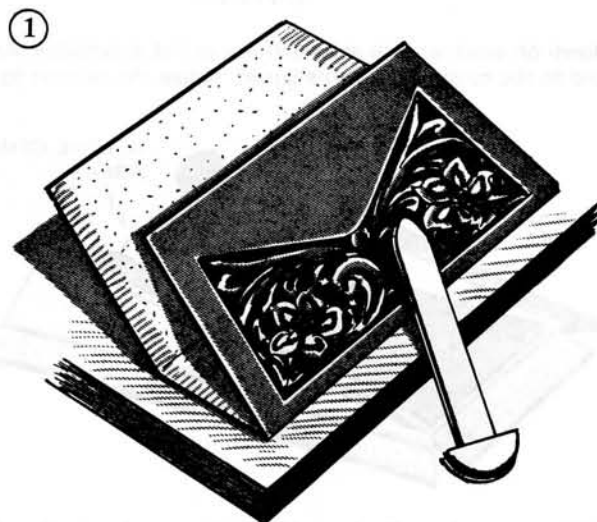


Place the gusset against the edge of the work surface as shown and fold gouge "A" back. Use the Bone Folder to sharply crease the gouge. Be sure the fold is on the gouge. Rub the Bone Folder quickly and firmly over the folded edge. Fold other gouge "A".

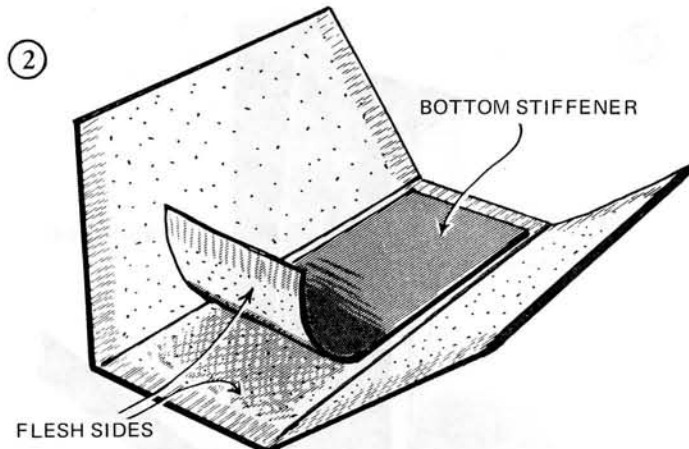


Turn gusset up on work surface and fold gouge "C" forward as illustrated. Use the tip of the Bone Folder to make a sharp crease. CAUTION: Repeated hard rubbing over the grain side of damp leathers will "burnish" (darken) the leather. This is usually undesirable on folded edges. Therefore, use the Bone Folder sparingly.

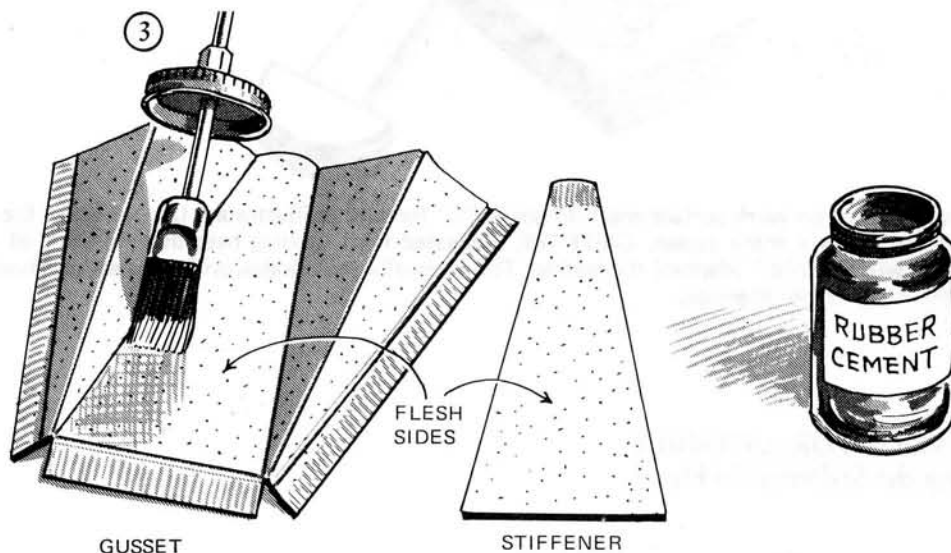
PREPARATION FOR ASSEMBLY (Cementing the Stiffeners in Place)



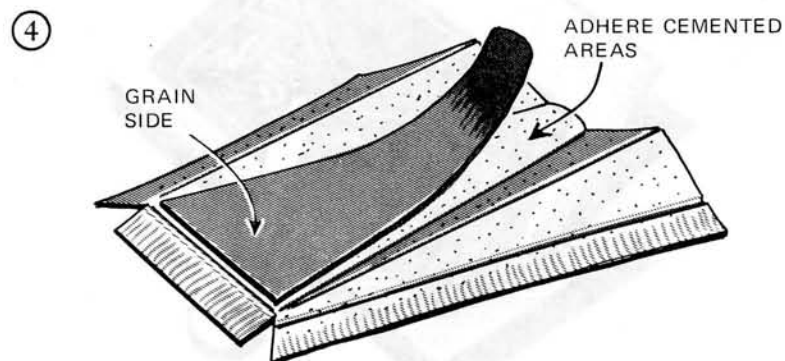
After gouging and skiving the edges of the bag, moisten the gouged areas and fold. Use the Bone Folder as shown. Fold both sides of the bag upward from the bottom.



Prepare the bottom stiffener as instructed. Apply rubber cement to flesh side of stiffener and to bottom of bag. When dry, adhere in place. Be sure the stiffener is properly centered from ends and gougues.

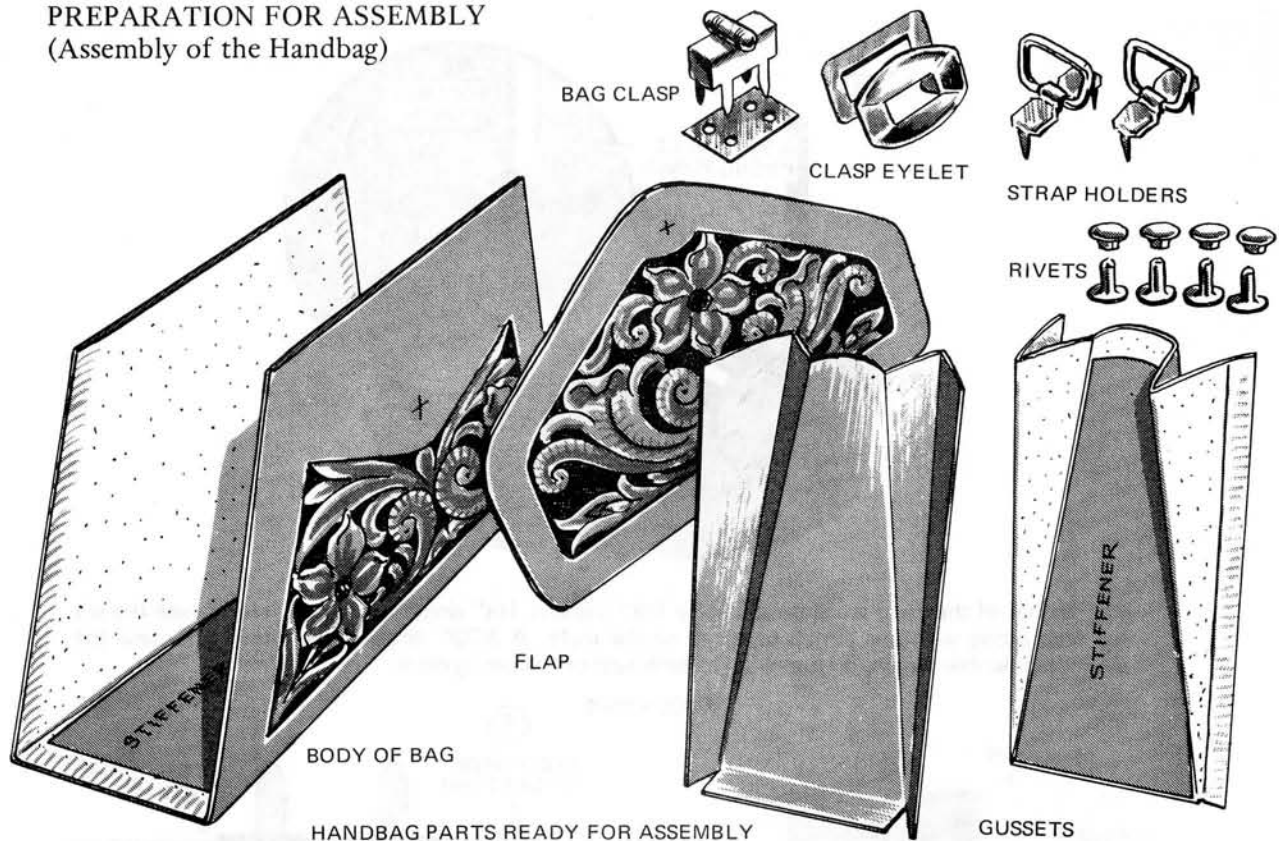


Place gusset grain side down on work surface and push out as flat as possible. Apply rubber cement to the gusset stiffener and to the center area of the gusset. Allow the cement to dry.



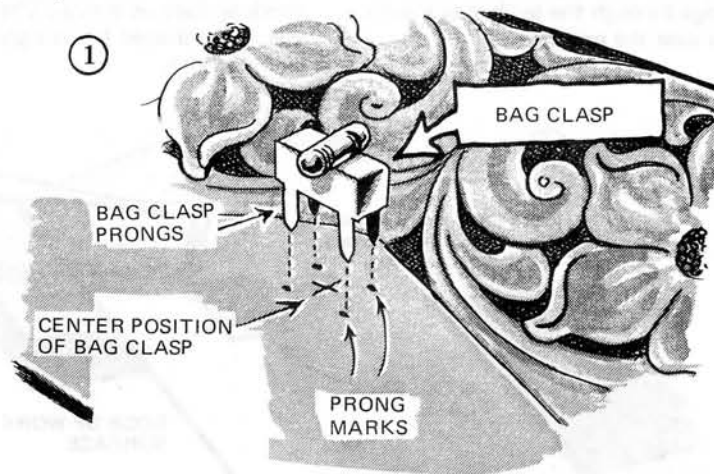
Carefully adhere the stiffener in place. Begin at the bottom and keep the sides of the stiffener equally spaced from the gougues at either side. If crooked, peel loose and re-cement. Tap with mallet for better adhesion.

PREPARATION FOR ASSEMBLY (Assembly of the Handbag)

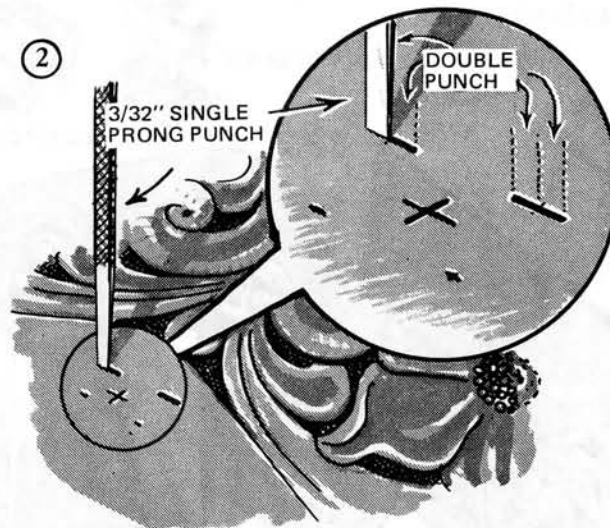


The leather should be checked with the patterns for correct dimensions and shape. Flatten the carved leathers and the gusset as much as possible and lay directly over the pattern. If the leather is too short or undersize, not much can be done. If the leathers are too long or uneven at the edges, trim to correspond to pattern.

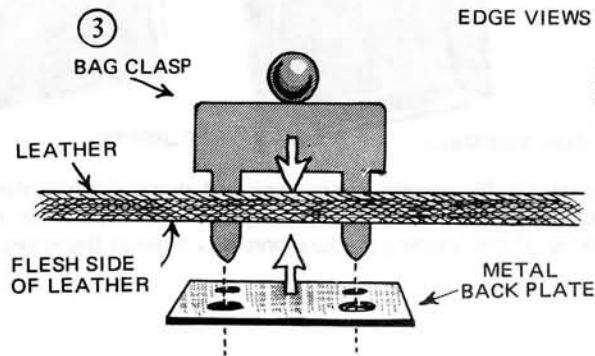
PREPARATION FOR ASSEMBLY (Installing the Bag Clasp)



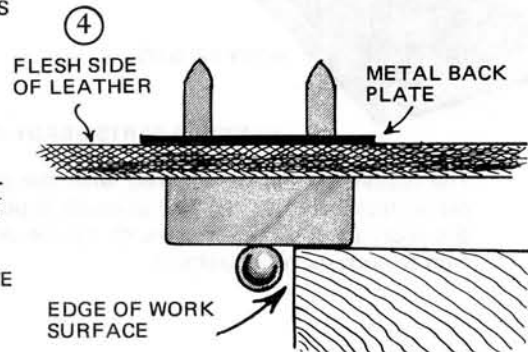
Mark the position of the bag clasp on the leather as indicated on the pattern. Straighten prongs of bag clasp with pliers. Place bag clasp over position as shown. Press firmly on clasp so that prongs clearly mark the leather.



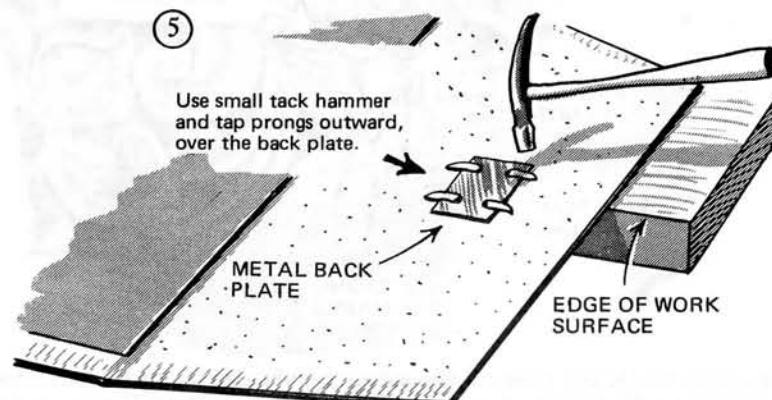
The prongs of the clasp are approximately 1/8" wide. A 1/8" single prong punch will make the slit for each prong with one punch centered on the mark. A 3/32" single prong punch will make the slit with a double punch, by punching at each side of the prong mark.



Strike the tool sharply and punch completely through the leather with each blow. Push the bag clasp prongs through the leather as shown. Fit back plate over the prongs.

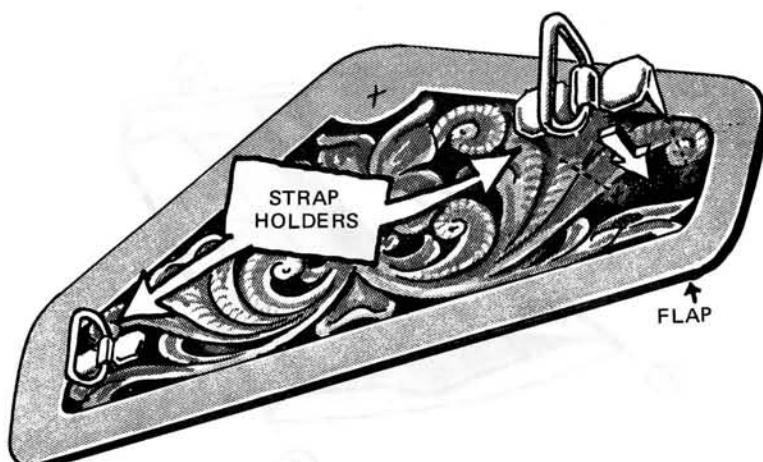


To clinch the prongs, turn leather over and place the shoulder of the clasp on the edge of work surface as shown. The turn-lock part of the clasp should be at right angles to expose the shoulder.



Begin bending prongs outward with pliers, then tap with hammer. Tap lightly but firmly to clinch the prongs.

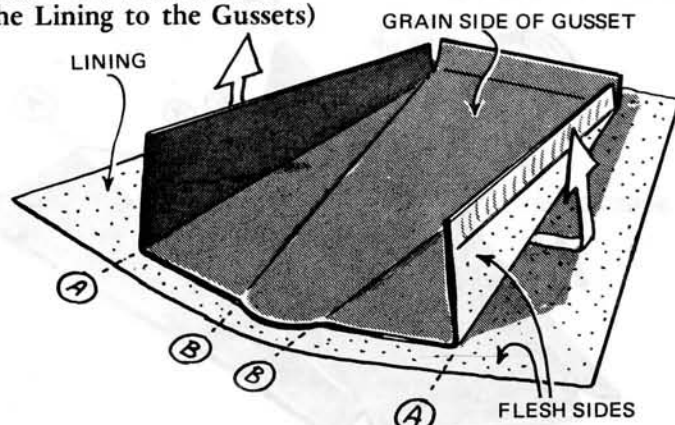
③



Install the strap holders in the flap in the same way. No metal back plate is used. Bend prongs inward.

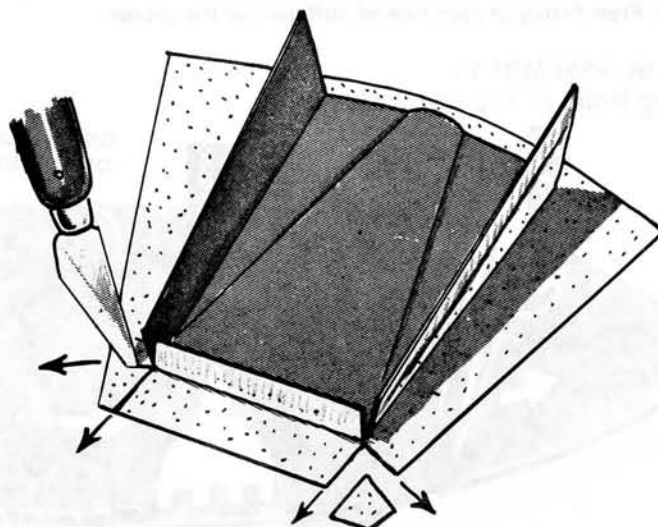
PREPARATION FOR ASSEMBLY (Cementing the Lining to the Gussets)

①

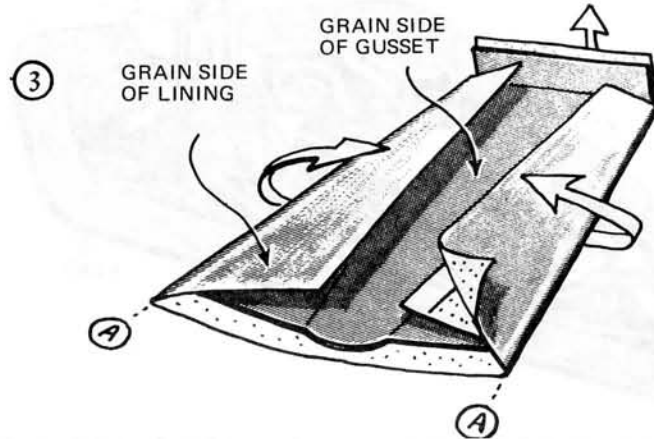


Lining leathers should be cut oversize, especially for gussets. Apply rubber cement to the flesh sides of the gusset and lining. Allow to dry. Spread gusset flat with edges folded up at lines "A".

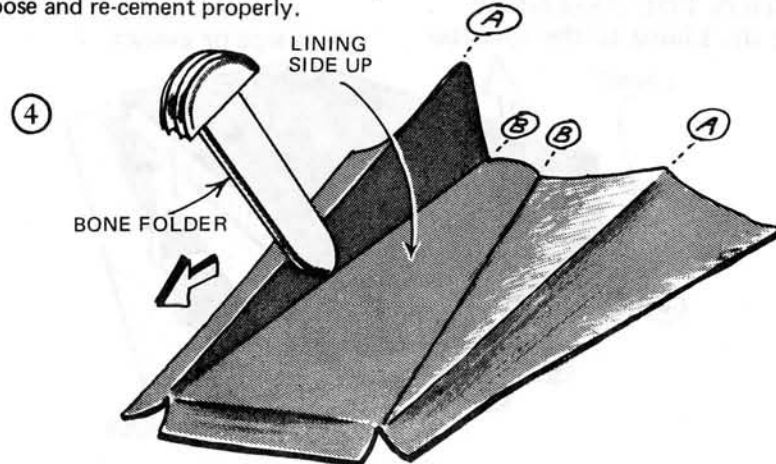
②



Carefully center the gusset and adhere to lining as shown in step 1. Be sure bottom of gusset is also folded up and does not adhere to the lining. With a sharp knife, carefully cut out the corners of the lining at the bottom area, as illustrated.

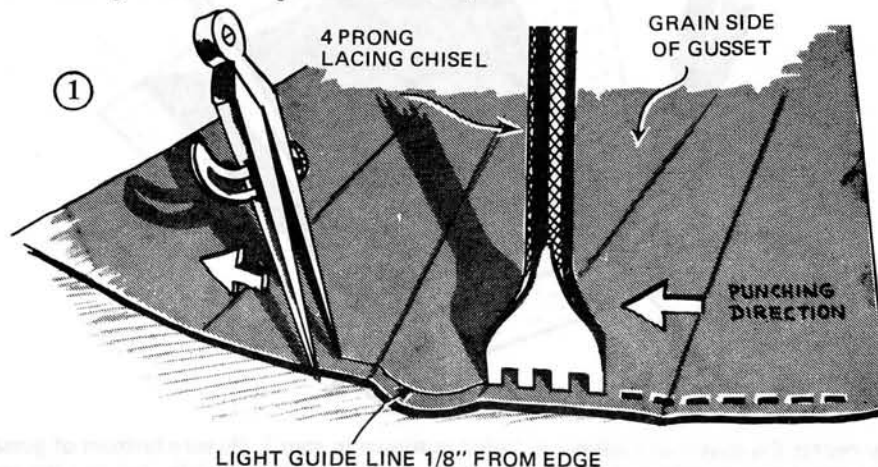


Next, fold the sides of the gusset inward, and carefully fold the lining leather over them to adhere. Also fold up at bottom as shown. If the lining is crooked and does not fully cover the gusset, pull the lining loose and re-cement properly.

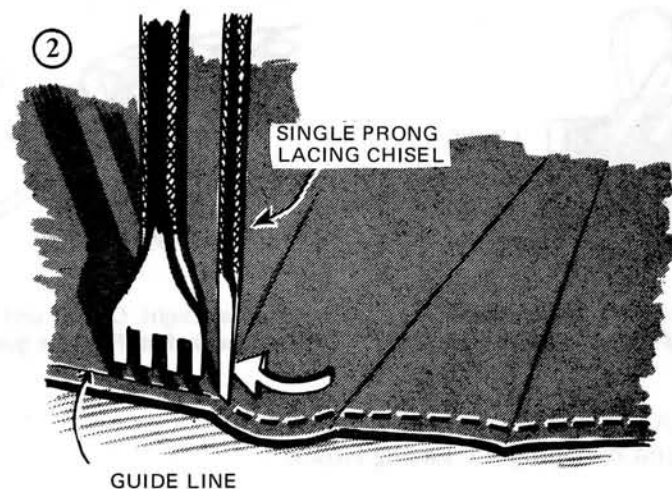


When the lining has been properly cemented in place, tap with Mallet or rub with Bone Folder to insure adhesion. Trim off excess lining and reshape the gusset to its folded position with the aid of the Bone Folder. Press firmly at each side of stiffener, at the gouges.

PREPARATION FOR ASSEMBLY (Punching the Lacing Holes in Top of the Gusset)

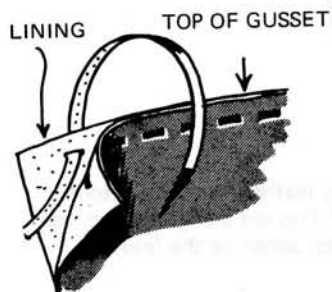


Scribe a light guide line at top edge of gusset. Begin punching lacing holes $\frac{3}{16}$ " from edge with the 4-prong chisel. Punch to the curved part of gusset as shown.



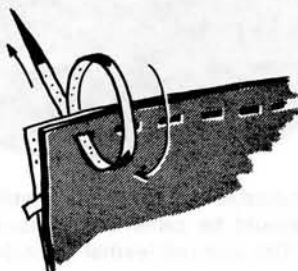
Use the single prong ($3/32''$) to punch around the curved area. Space and punch the holes carefully. Resume punching with the 4-prong chisel. End punching $3/16''$ from opposite edge.

(A)



Attach needle to one yard of lace and begin as shown, between lining and gusset.

(B)



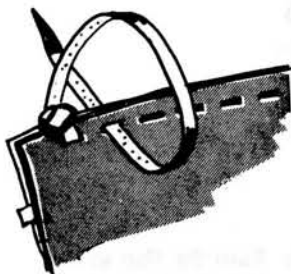
Close leathers on end of lace and go through same hole under end of lace.

(C)



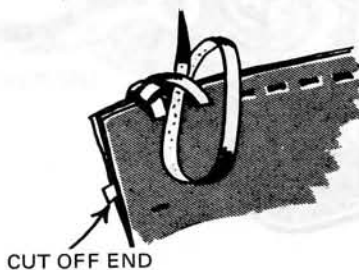
Pull stitch tight. Lace under the stitch as shown above.

(D)



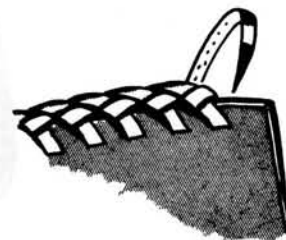
Pull stitch tight and lace through the next hole.

(E)

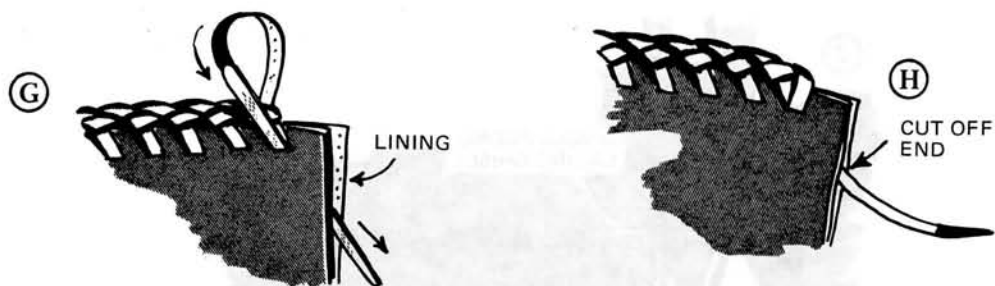


Continue lacing with the "Single Loop" stitch.

(F)



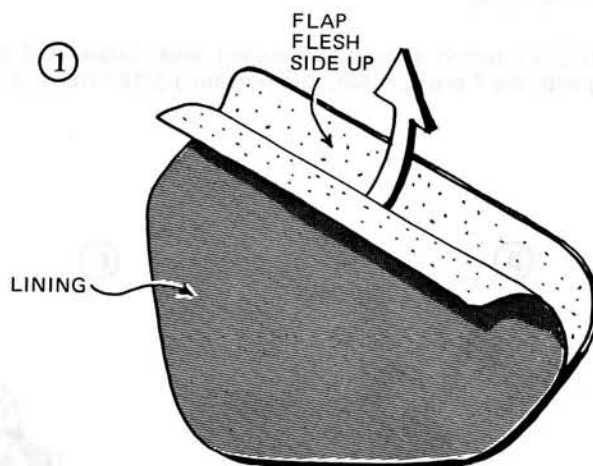
Lace with "Single Loop" stitch to the other edge of the gusset.



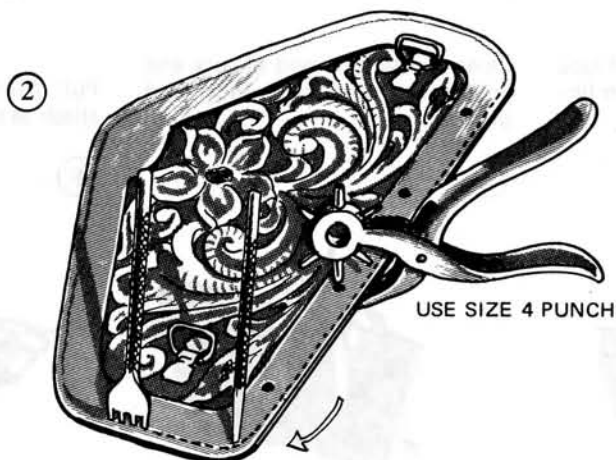
To tie lacing end, push needle down through last hole between leathers.

Pull lace tight. Cut off end. Tap or roll lacing flat. Reshape gussets.

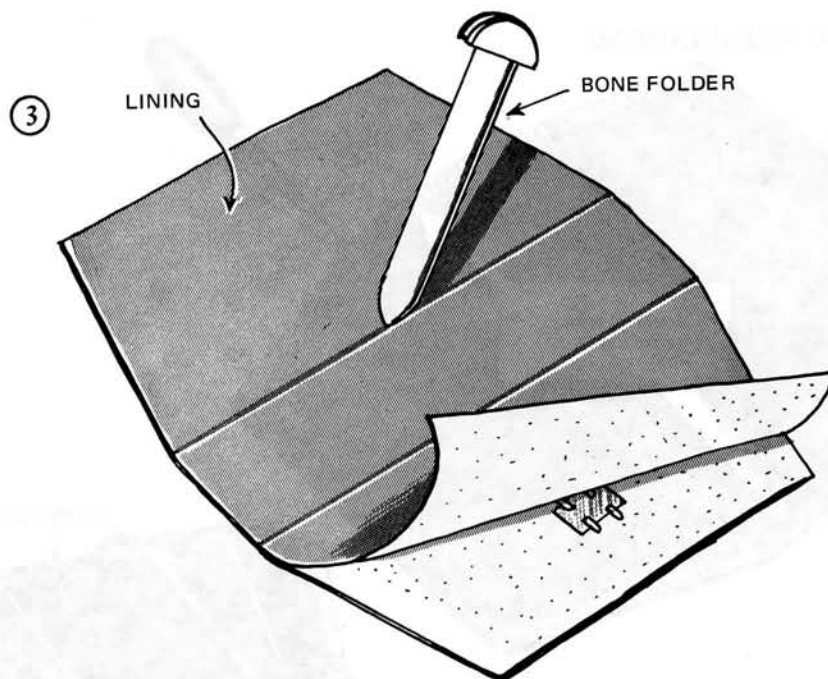
PREPARATION FOR ASSEMBLY (Installing the Linings and Punching the Lacing Holes)



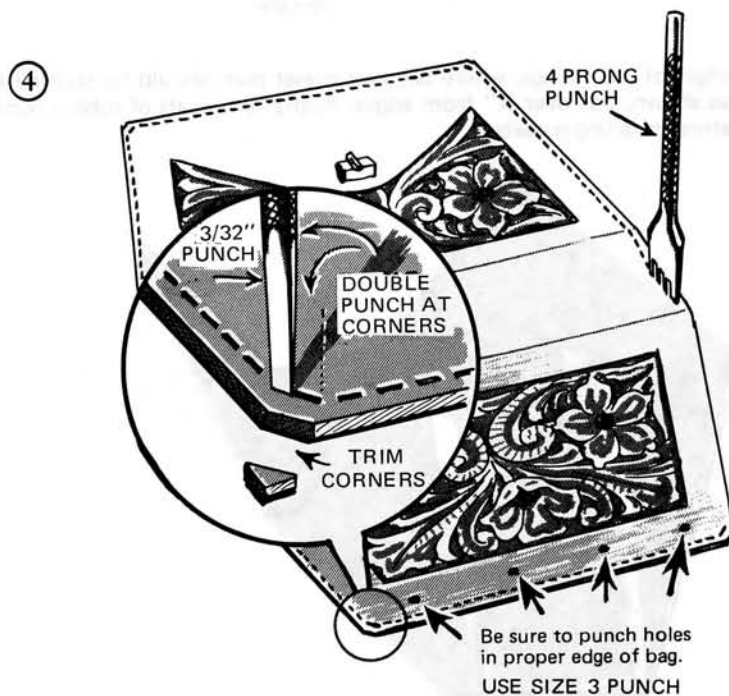
Always cut lining leathers slightly oversize for easier installation. Lining leathers can be stretched for wrinkle-free coverage. Lining should be cemented to back part of flap on a slight curve, as shown. Begin cementing at point of flap and roll leather at back edge when adhering the lining.



Trim off any excess lining. Scribe a lacing guide line $\frac{1}{8}$ " around the edge. Turn the flap so the edge being punched lies flat on the work surface. Use the single prong punch to go around the corners; space impressions carefully. Use the 4-prong punch on the straight edges. Punch the rivet holes as marked.

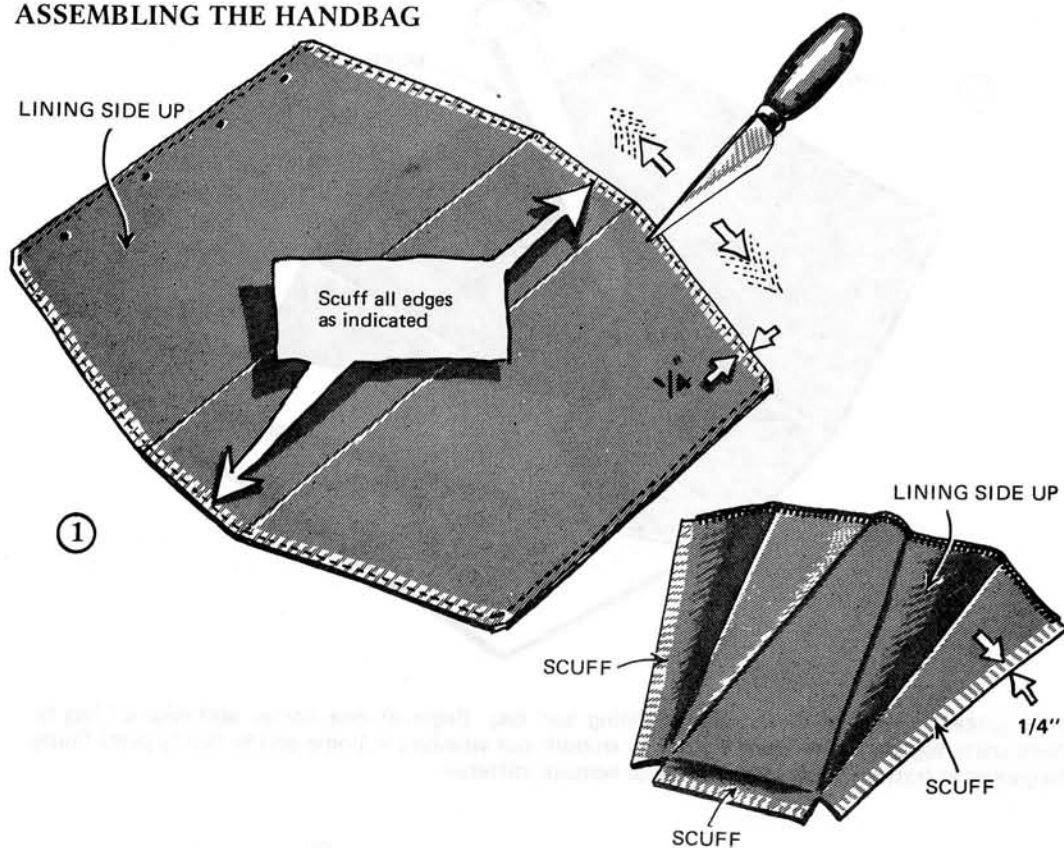


Apply rubber cement to flesh sides of lining and bag. Begin at one corner and edge of bag to adhere parts together. Use Bone Folder to smooth out wrinkles in lining and to firmly press lining into gouges at bottom folds on each side of bottom stiffener.

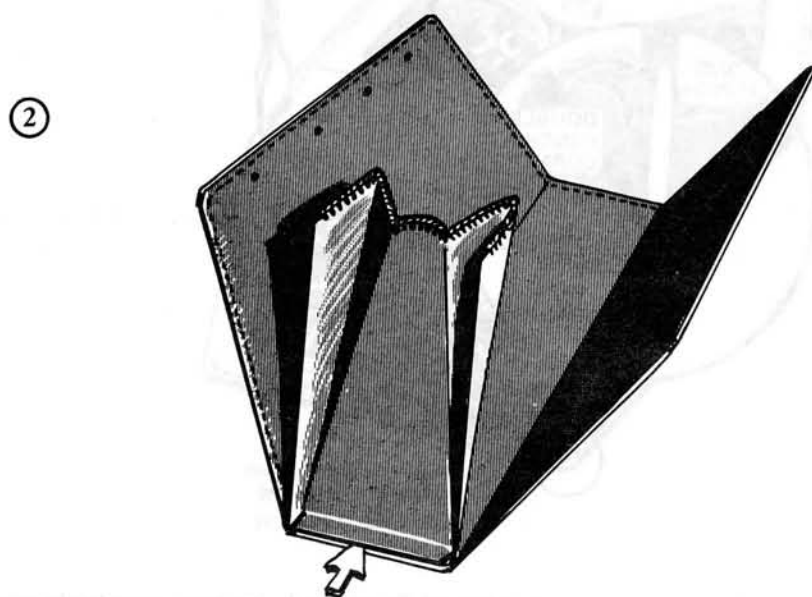


Trim off excess lining and trim the corners as indicated. Punch the lacing holes completely around the bag following a guide line $1/8$ " from edges. Double punch the corner holes. This will make lacing easier, as the corner holes must be laced through three times. Punch all holes carefully.

ASSEMBLING THE HANDBAG

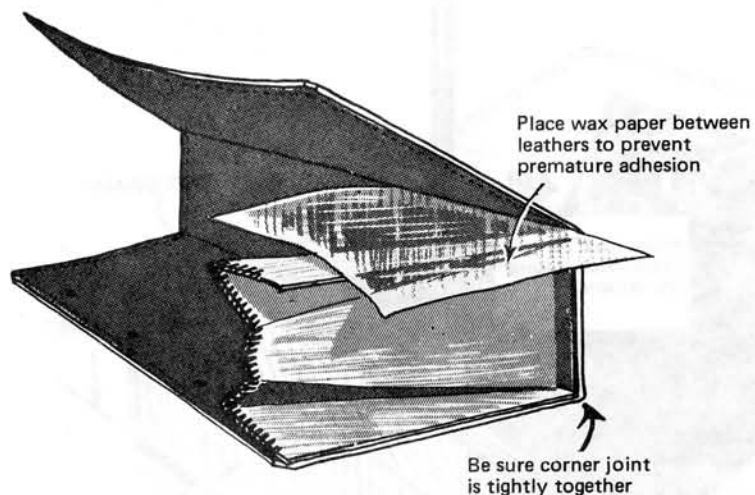


For best adhesion, the edges of the linings, where bag and gusset join, should be skuffed before applying cement. Skuff as shown, not over 1/4" from edges. Apply two coats of rubber cement to edges and allow to dry before installing gussets.



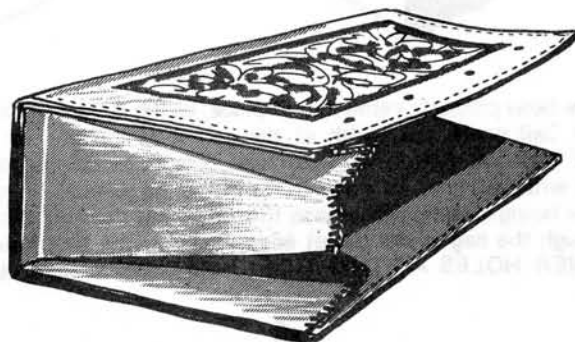
Begin by cementing bottom of gusset to bag as shown. Carefully center gusset between gouges and align edges. Tap with Mallet for good adhesion.

③



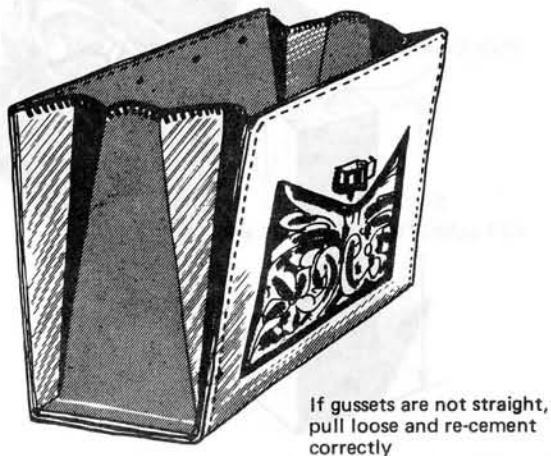
Press side of gusset down to make a tight joint at bottom and roll bag on side to adhere side edges. If uneven, pull loose and re-adhere properly.

④

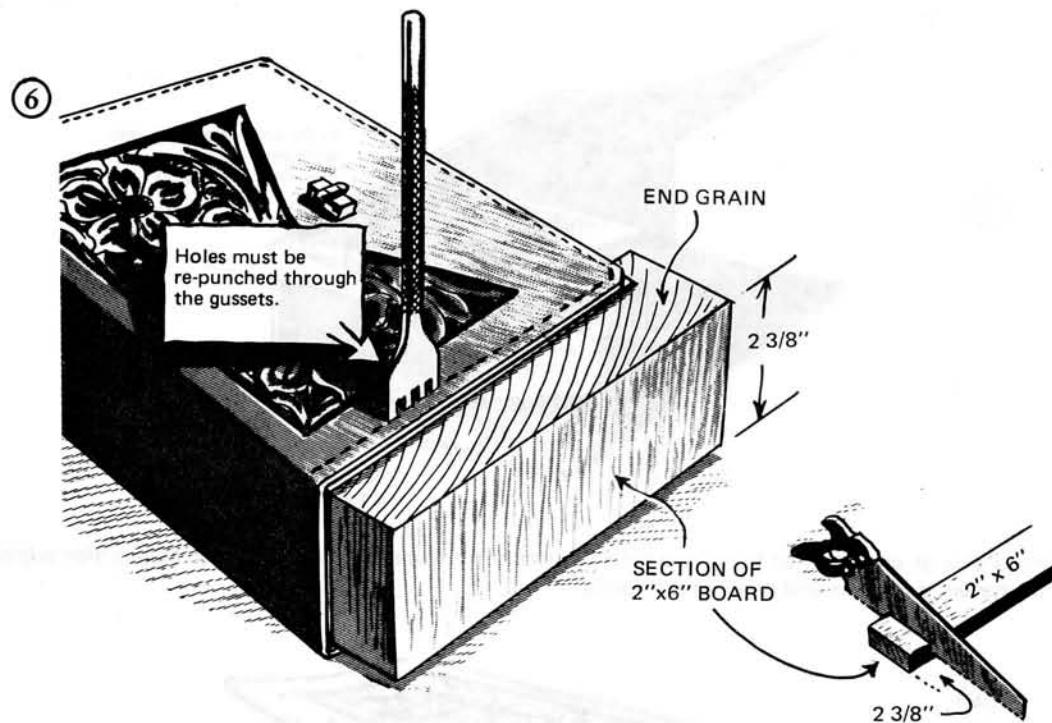


Repeat operation with opposite side of gusset. Top edges of gusset leather should be almost flush with top edges of bag. Be sure enough leather covers corner holes of bag.

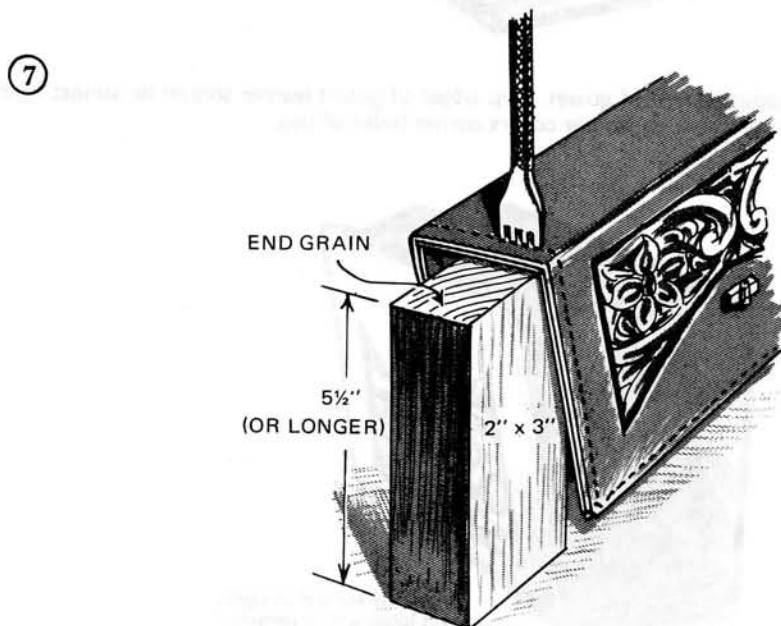
⑤



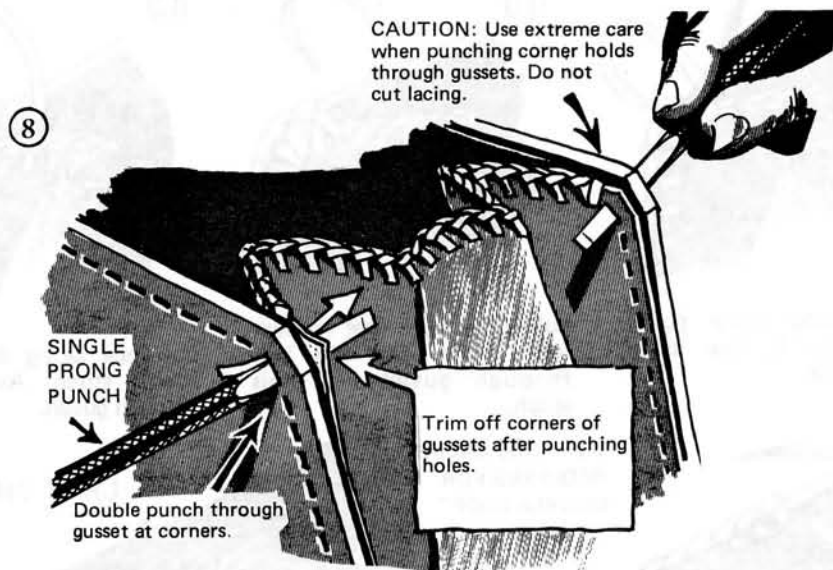
Bag is ready to punch holes through gussets.



After the gussets have been properly cemented in place, lacing holes need to be punched in gussets. A section of 2x4 or 2x6 board the width of the gusset at the bottom of the bag (in this case approximately 2 3/8") makes a good work surface. The block should be smooth. Insert block between gusset sides with end grain of wood as the punching surface. Be sure wood is tight against the gusset so that the lacing chisel punches into the block and does not slip off the edge. Re-punch all of the holes through the bag at the gusset edge. Begin at the first holes below the corner. **DO NOT PUNCH CORNER HOLES AT THIS TIME!** Hold chisel straight up and down. Strike tool firmly with a Mallet.

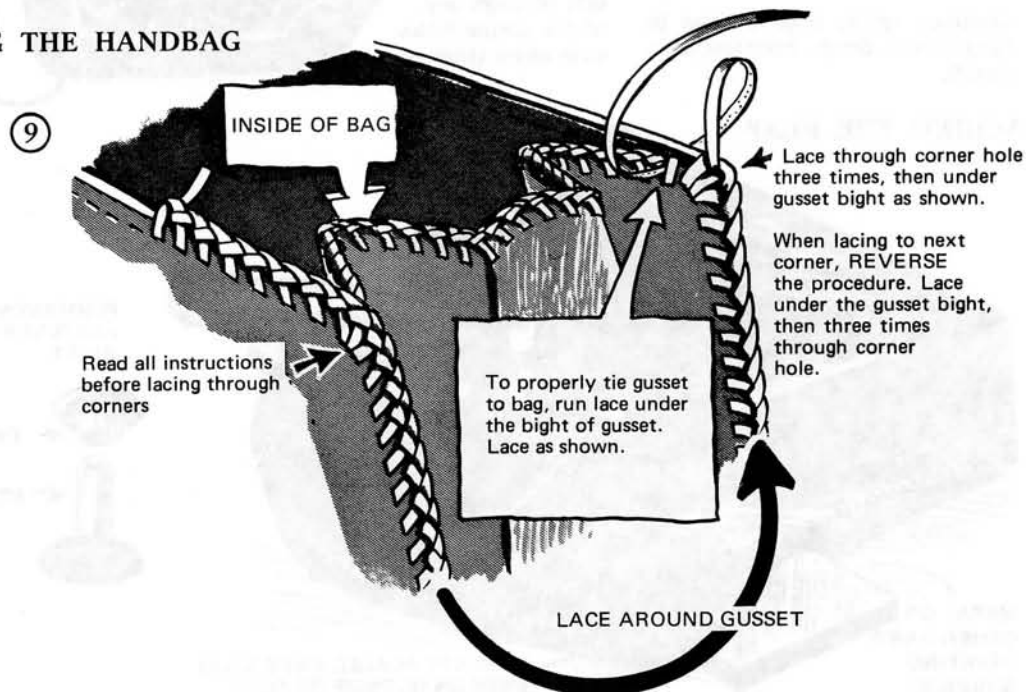


To punch through bottom holes, turn block of wood and bag as shown. Always punch into end grain of wood for clean-cut holes. Be sure block is tight against gusset so that punch does not slip off edge of wood and force a crooked hole or mar the leather.



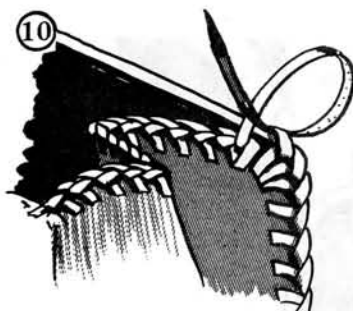
Now punch the corner holes using extreme caution! Remove block and view the leathers. If you are certain the punch will go through corner holes without injuring the lacing at top of gusset, replace the block and double punch the corner holes. If you are uncertain that the clearance is enough, punch through corners at a slight angle to avoid cutting the lace. Hold block in free hand as a punching surface. Corner hole in top of gusset can actually touch end holes in gusset (as long as lacing is not injured) without harmful results. Study illustration.

LACING THE HANDBAG

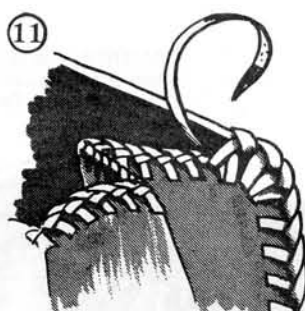


For easier lacing, cut lace into 2½ to 3 yd. lengths. More splicing will be required, but this eliminates pulling long lengths of lace through the holes; prevents lace stretch and fraying from being pulled through so many holes. Begin at top edge of bag, near one corner, and lace completely around the bag with the "double loop" stitch.

To properly cover the gusset edge with lace, at corners, follow corner instructions. When lacing through last hole (next to corner hole) run lace under the gusset bight, then through corner. This method covers exposed edge of gusset leather and adds extra strength to the corner.



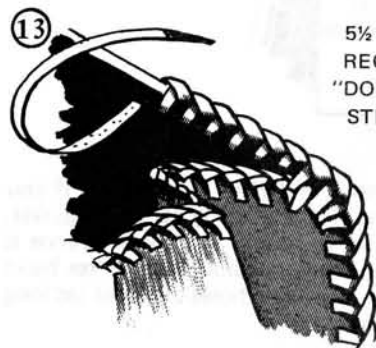
After lacing under gusset bight, step 9, lace under regular bight.



Pull stitch tight, lace through next hole. Do not lace through gusset with this stitch.

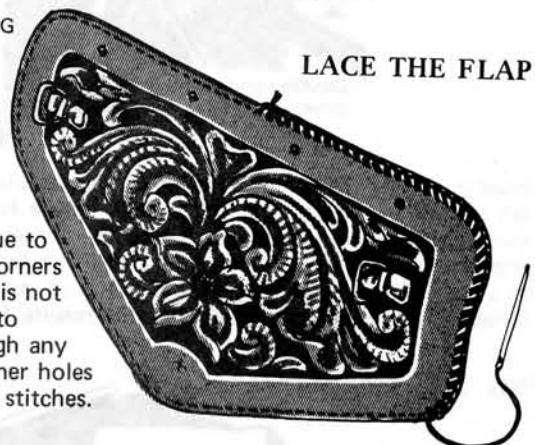


Continue lacing the "double loop" stitch. Avoid lacing through gusset.



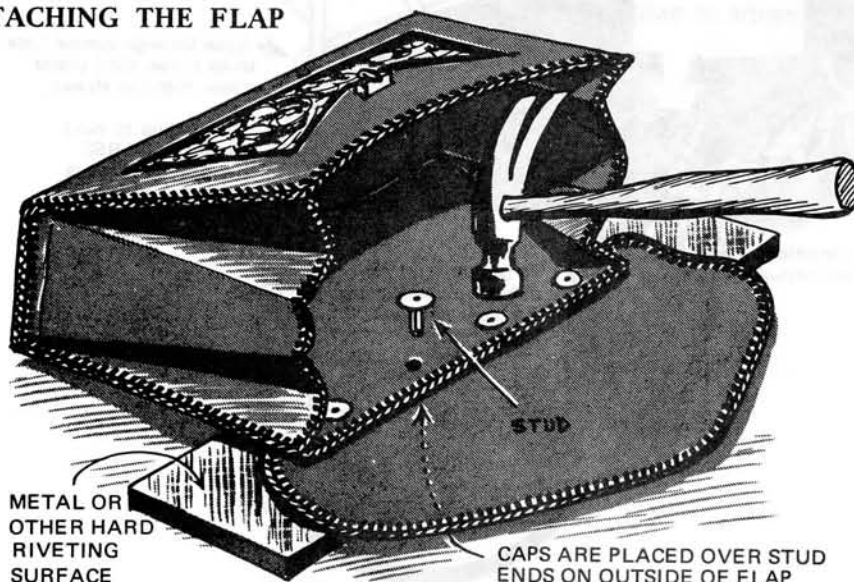
Continue lacing edge of bag to next corner. Study instructions in step 9.

5 1/2 YARDS LACING
REQUIRED FOR
"DOUBLE LOOP"
STITCH



NOTE: Due to rounded corners of flap, it is not necessary to lace through any of the corner holes with extra stitches.

ATTACHING THE FLAP



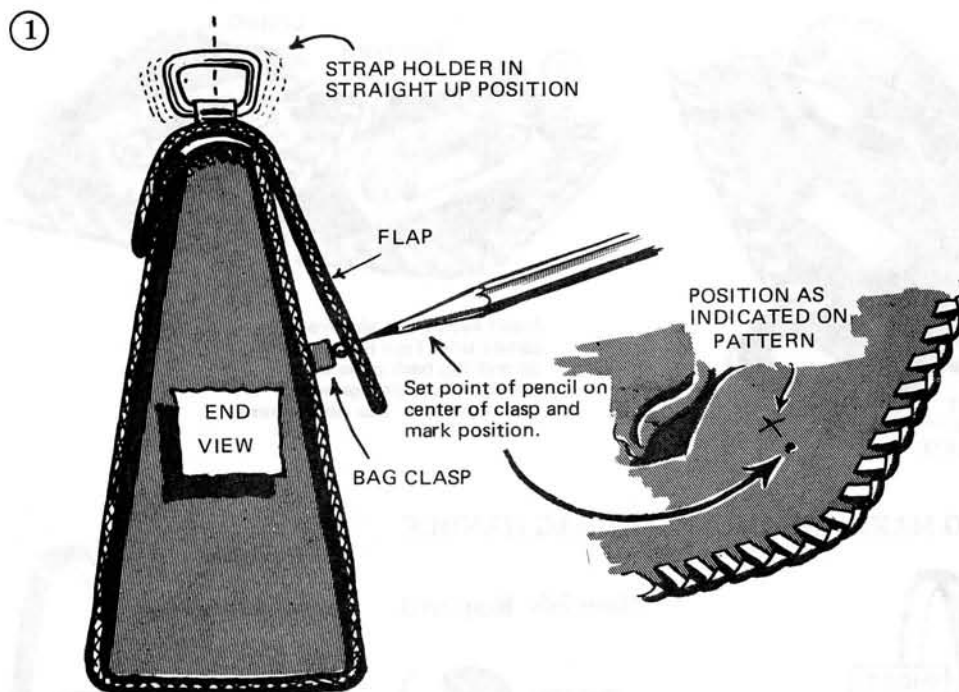
PERMANENT
FASTENER
RIVET



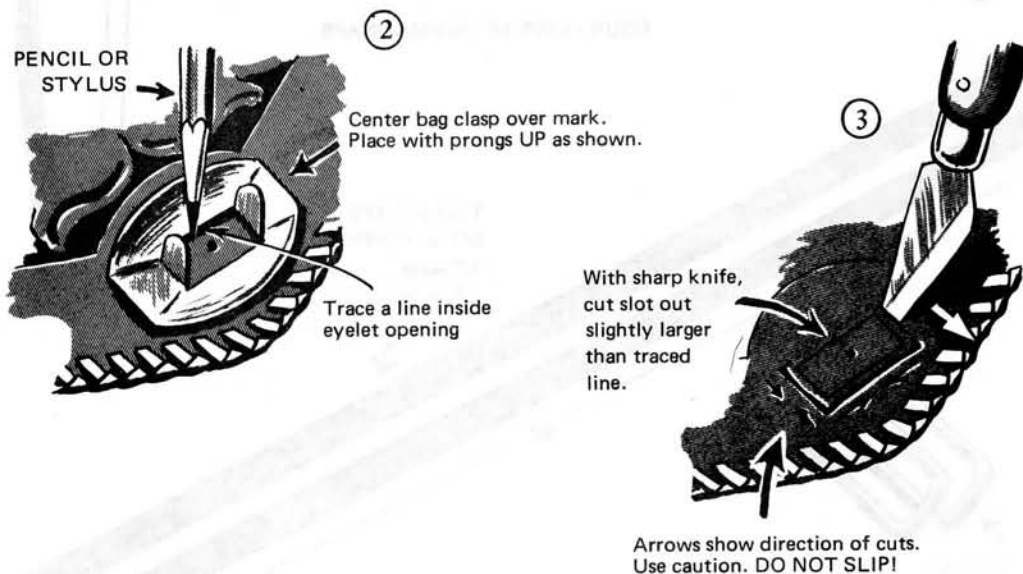
After lacing the bag and the flap, tap or roll the lacing flat as previously described. The Circle Edge Slicker is a good tool to rub back and forth over the lacing to form a smooth, well rounded edge.

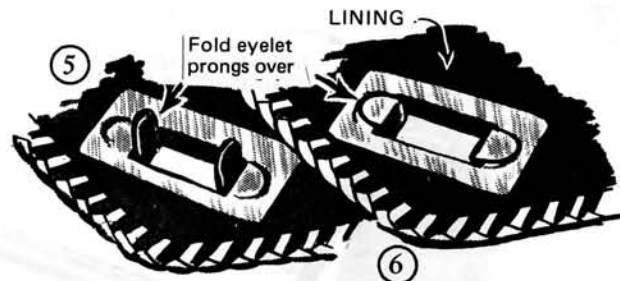
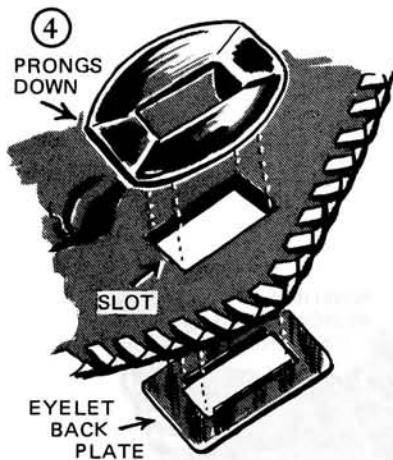
Attach the flap to the bag as shown. Push the stud part of the rivets through the holes from the inside of the bag. Push through the holes in flap and push caps of rivets over stud ends. Place on riveting surface and swat with hammer to secure rivets.

INSTALLING THE BAG CLASP EYELET



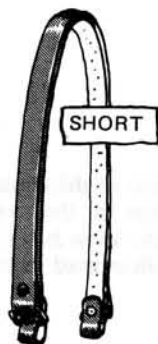
The flap pattern shows location of the bag clasp eyelet. However, due to variations of thickness of leather, assembly, etc., this position may not be correct. To locate exact position for the eyelet, pull the flap over the closed bag with the strap holders in a straight up position. View bag from end and mark with pencil, the flap at the center of the bag clasp. Follow the illustrated steps to install the bag clasp eyelet.



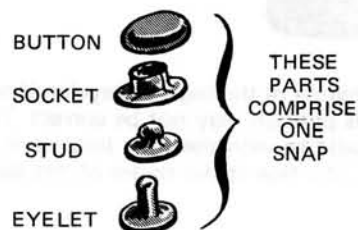


Insert eyelet into slot from carved side. Turn lining side up and slip back plate into position. Fold prongs over into recessions. Tap with hammer.

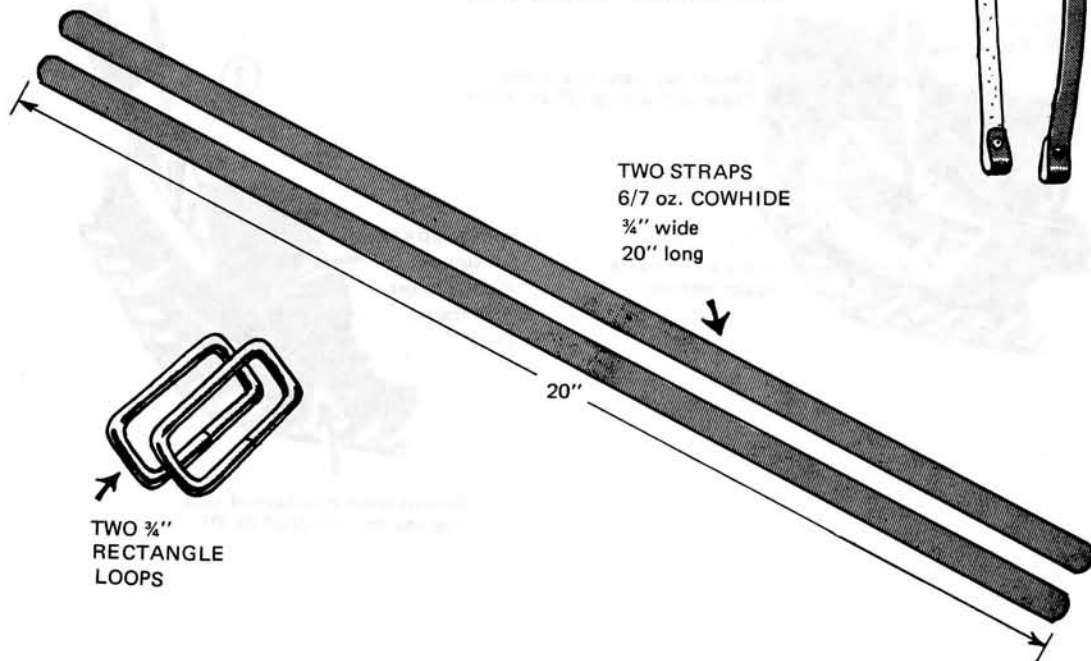
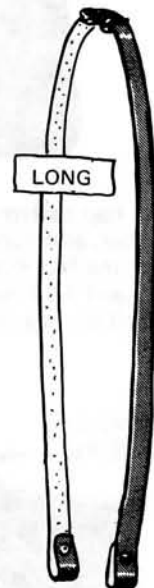
HOW TO MAKE AN ADJUSTABLE BAG HANDLE

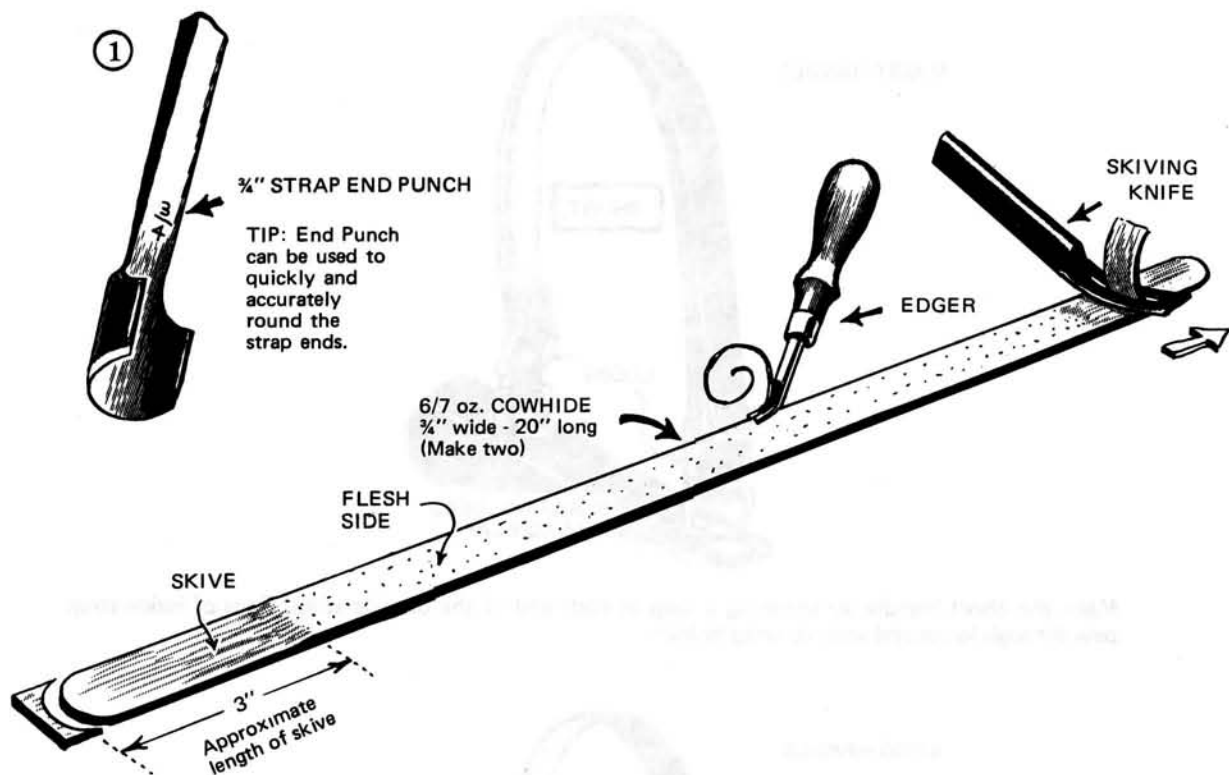


Materials Required

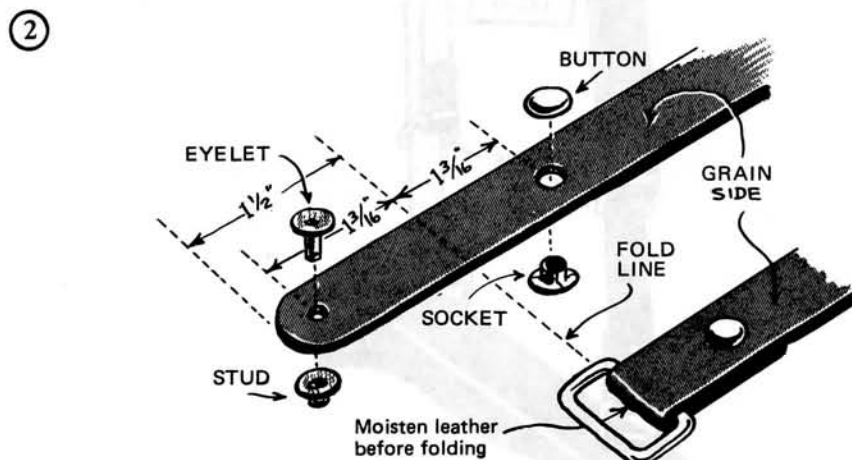


FOUR - LINE 16" SEGMA SNAPS





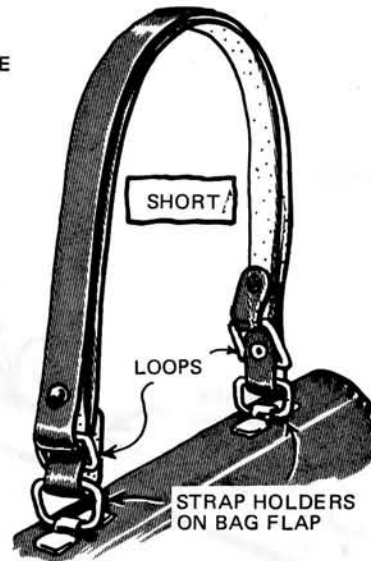
Prepare straps as shown. Skive and round the ends. Edge and burnish the edges. Dye the edges if desired. Apply leather dressing to both sides and edges of straps before installing loops.



Attach the snaps to each end of both straps

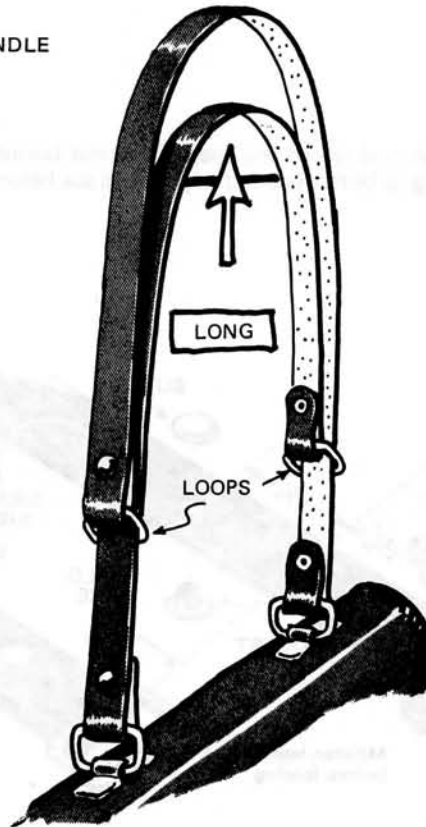
ADJUSTING THE HANDLE

SHORT HANDLE



Make the Short Handle by snapping a loop at each end of the outside strap. Ends of inside strap pass through loops and snap to strap holders.

LONG HANDLE



Make the Long Handle by strapping a loop to one end of each strap. Each strap passes through the other's loop and snaps to the strap holders.

PROJECT EVALUATION GUIDE

I. OVERALL EXTERNAL APPEARANCE OF PROJECT

- A. Clean Lines
- B. Symmetry of Design
- C. Cleanliness and Neatness

II. DESIGN EXECUTION

- A. Swivel Knife Work
- B. Stamping Tool Applications
- C. Finish and/or Dye Applications

III. STRUCTURAL ASSEMBLY

- A. Lacing Hole Alignment
- B. Lacing Stitch Execution
- C. Skiving, Folding and Creasing for sharp clean lines
- D. Hardware Installation

IV. INTERNAL APPEARANCE

- A. Lining Applications
- B. Cleanliness and Neatness
- C. Functionality of Internal Features

V. COMPLEXITY OF PROJECT

- A. Number of Techniques Exemplified in Project
- B. Extensiveness of Design Applied
- C. Improvisation

PROJECT EVALUATION

I. GENERAL DATA AND SCOPE OF PROJECT

1. Project Name
2. Project Location
3. Project Start Date

II. PROJECT DESCRIPTION

1. Project Objectives
2. Project Scope
3. Project Budget

III. PROJECT ASSESSMENT

1. Project Status
2. Project Progress
3. Project Risks
4. Project Benefits

IV. PROJECT CONCLUSION

1. Project Summary
2. Project Results
3. Project Recommendations

V. PROJECT APPENDIX

1. Project Documents
2. Project Data
3. Project References

9

REQUIREMENTS FOR A LEATHER WORK PROGRAM

This chapter is written for the teacher who wishes to cut leather projects from bulk leather. The equipment and supplies are geared to an "average" situation, but may be easily adjusted to meet individual requirements. The suggestions are based on a program of cutting projects from bulk leather, which utilizes the principles and techniques described in this manual.

The same principles and techniques also apply to pre-fabricated leather kit projects, should you find them more desirable.

STUDENT EQUIPMENT: The following equipment is recommended for each student in your program:

1. Hard surface composition tooling board
2. Small plastic cup or vessel for water
3. Hard rubber surface board for punching and cutting
4. Striking mallet (rawhide is best)
5. Swivel knife with 3/8" steel blade
6. Sharpening stick
7. Basic stamping tool set (tools number: C431, P206, B200, V407 S724, A104)
8. Modeling tool (spoon/pointed tip combination)
9. Small tool rack

DEPARTMENTAL EQUIPMENT: This equipment list includes items which are permanent fixed equipment and can be shared by a number of students.

1. Utility Knives — 1 knife per each 2 students
2. Wing Divider — 1 wing divider per each 5 students
3. Thonging Chisels — 1 prong and 4 prongs 3/32 inch - Ratio 1 thonging chisel of each style per each 2 students
4. Rotary Hole Punch — 1 rotary hole punch per each 5 students
5. Set of Round Hole Drive Punches — 1 set per each 5 students
6. Steel Square for straight edge cutting — 1 steel square per each 3 students
7. Gouging Tools — 1 gouging tool per each 3 students
8. Skiving Tools — 1 skiving tool per each 3 students
9. Bone Folder Tool — 1 bone folder per each 5 students
10. Edge Beveling Tools (size 3) — 1 edge beveling tool per each 5 students
11. Lacing Awls — 1 lacing awl per each 2 students

CONSUMABLE SUPPLIES: The supplies listed below will be used in the process of following the instructions in this manual. Sizable savings can be realized by purchasing these supplies in quantity. See your leather dealer's supply catalog for quantities and best price level at which to buy.

1. Leather Work Sponge — Minimum 1 per student
2. Oxalic Acid (leather bleach) — 1 pound package adequate
3. Transfer Paper or Film
4. Leathercraft Cement — 2 oz. container per student
5. Practice Leather Pieces
6. Lacing Needles
7. Snap Fasteners — Line 16 glove snaps
8. Permanent Rivets
9. Key Plates — 6 Hook
10. Handbag Clasp Fasteners
11. Handbag Strap Hangers

12. 3/4" Rectangular Dee Rings
13. Leather Finisher
14. Sheep Wool Applicators
15. Leather Dye
16. Dye Brushes
17. Natural Tooling Cowhide Leather
18. Lining Leathers
19. Leather Lacing
20. Protective Plastic Gloves

SPECIAL LEATHER WORKING TIPS

PURCHASING SUPPLIES: Competent leather dealers offer the services of trained personnel to assist you, both in setting up and maintaining your leather working program. These dealers also furnish catalogs containing a wide variety of leatherworking supplies and equipment.

It is recommended that you purchase an entire semester's supplies at one time because you save time AND get substantial discounts on the supplies you purchase in quantity.

BUYING LEATHER: Leather is priced by the square foot. If you cut your own projects the following information will help you to establish your cost per project.

Heavy cowhide leathers (required for larger projects) are available by the side, back or in specific block cut sizes. Your leather dealer can provide invaluable assistance in establishing the size best suited to your individual requirements.

There are two important factors to consider in judging the quality of leather. First, the structural aspect: the internal make-up of the leather's fiber structure. The consistency and firmness of this fiber structure are of vital importance to the lasting durability of the finished article. In most cases the care with which the leather was tanned determines the structural characteristics.

The second factor in judging leather quality is the graphic or surface appearance. One of the distinctive characteristics of genuine leather are the natural range markings. The animal develops his armor-like skin in response to the elements and adversities of the open range. Actually, the surface markings of an animal's skin represent a day-to-day story of his life. Most animals bear such markings on the grain surface of their skin. However, because man has little understood the structural quality of the animal skin, but has demanded a near-perfect appearing skin, most leather dealers grade leathers with heavy emphasis on the degree of "unblemished" appearance. Therefore, when you purchase your bulk leather supplies, remember that surface markings are an integral characteristic of genuine leather. . . as a result you will get better quality at lower prices!

LEATHER CUTTING TIPS: The methods you employ in cutting your projects determine the cost per project. Careful layout and position study of the cutting patterns or templates will

ensure that you consume the maximum surface area of each skin of leather. Since the conformity or shape of the component parts can vary widely, you should strive to lay out your cutting patterns as closely as possible, one to the other, placing small and large parts together in jigsaw-puzzle fashion.

One popular technique used by instructors where it is desirable for each student to cut out his or her individual component parts is the block cut system. Rectangular leather shapes sufficient to accommodate a specific part are pre-cut and furnished to each student. The student then lays out the cutting pattern on the block cut and cuts out the part.

DESIGN PATTERNS: To stimulate creativity and individualism there should be a substantial library of design patterns available to the student. Almost any leather carving design can be executed with a basic stamping tool set. This does require some improvisation on the part of the student.

There are a vast number of design pattern books available from leather dealers which will be invaluable in teaching the principles of artistic decoration of leather.

DESIGN TRANSFER TEMPLATES: Teaching the principles of leather work is much like teaching the playing of a musical instrument. It is of utmost importance that a musician be taught and encouraged to practice all of the basic fundamentals before attempting creativity.

To assist and speed up the process of the implanting of the basic principles of leather working, most leather dealers offer a wide selection of plastic design transfer templates. Through the use of this aid, a student can be involved in the execution practice with the actual carving and stamping tools very quickly.

Design transfer templates become a part of your permanent equipment because when used correctly, they may be used for years.

STORAGE OF IN WORK PROJECTS: Leather working projects will often be worked on over several instruction periods, therefore, it is advisable to provide an orderly method of storage for all component parts of the project.

Often the leather will be moist from casing and can mildew in high humidity areas if preventive measures are not taken.

Both storage and preservation can be accomplished by requiring the student to have a large polyethylene bag for storage of his "in-work" project. Large food storage bags, readily available in most supermarkets, are ideal for this purpose.

CARE AND MAINTENANCE OF EQUIPMENT: The performance of precision tools is largely dependent upon their care and maintenance. An important principle in the performance of professional quality workmanship is the understanding and respect for the tool involved. All tools should be cleaned after use and stored in an orderly manner to prevent damage.

Many instructors recommend the appointment of a bench or area captain to be responsible for the care and maintenance of the equipment and supplies. This approach can also be of assistance in controlling and inspiring the "problem" student.

Because of their size and the potential for concealment on the person, you may encounter disappearance of the small tools. It is recommended that all tools and equipment be appropriately marked with paint. Marking with paint in school colors will further inhibit the pilferage of equipment.

It should be noted that natural unpigmented tooling leathers are subject to oxidation which is much like sunburn on human skin. Until protective leather finishers have been applied, keep all natural leathers out of contact with direct sunlight and prolonged exposure.

VISUAL AIDS: There are numerous visual aids available from leather dealers. Most leather dealers will provide free film showings and demonstrations to inspire interest and give your class an in-depth exposure to leather work.

HOMEWORK: Due to the time limitations necessary in the school day schedule, many educators recommend that leather working students be encouraged to do projects at home for practice and to supplement classroom work. Extra grade points can be offered as an incentive for this "plus" effort. Complete packaged leather working outfits including all necessary tools are available through better leather dealers. These packaged equipment sets are relatively inexpensive and serve as a leisure time hobby as well as a homework vehicle for the student. Through combined quantity buying of these packaged equipment sets, substantial savings can be realized. These savings can be accrued and applied against classroom equipment.

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